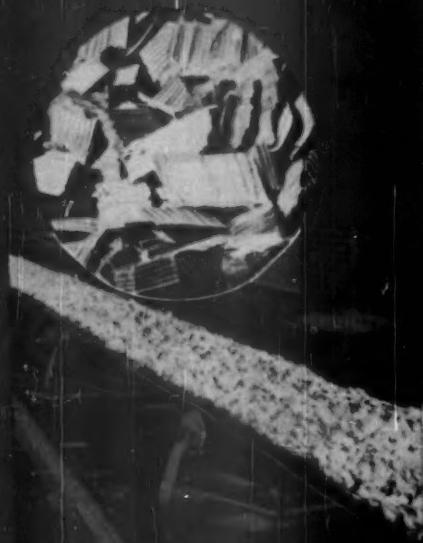


THE PRODUCTION AND MANAGEMENT JOURNAL OF THE NORTH AMERICAN PULP AND PAPER INDUSTRY



THE TIMBER MOUNTAIN CO.  
PHOTO BY ERNEST BROWN FOR THE PAPER COMPANY



**HEPPENSTALL**

**L.S. Chipper Kilowatt**



WHEN SEEKING THE SOLUTION  
TO A WATER CONDITIONING PROBLEM

*Remember  
There's no substitute  
for Experience!*

# COCHRANE

## SLUDGE CONTACT REACTORS

Clarifies water by  
use of sludge con-  
tact principle.

Raw water and  
chemicals enter  
near the bottom of  
the tank. Motor  
driven agitator  
mixes them thor-  
oughly forming  
floc or precipitate.  
The agitator also  
keeps the floc or  
sludge suspended,  
so that the water is  
both treated and  
filtered by the  
sludge bed or  
blanket as it rises  
in the tank.

For the Clarification of Water and  
the Recovery of Waste in Process

COCHRANE's specialization in the conditioning of in-  
dustrial water supplies over the past fifty years and the  
combined years of experience of Cochrane engineers  
in that field, is your assurance of satisfactory service from  
any Cochrane installation. In the new method of sludge  
contact or removal by flocculation of impurities, turbidity,  
color or hardness, the Cochrane Sludge Contact Reactor  
accomplishes all these functions with complete efficiency  
and surprising economy. A new bulletin, Publication 500,  
is available and will be sent on request.

The inclined blades of the agi-  
tator cause water  
and sludge to be  
deflected to the  
center where the  
mixture rises  
through the central  
port and is then  
recirculated back  
to the bottom, sav-  
ing chemicals and  
producing a heavy  
floc. Central  
steel baffles divide  
the Reactor into a  
mixing zone at the  
bottom and a  
clarifying zone at  
the top.



COCHRANE  
CORPORATION



17th St. Below Allegheny Ave.  
Philadelphia 32, Pa.

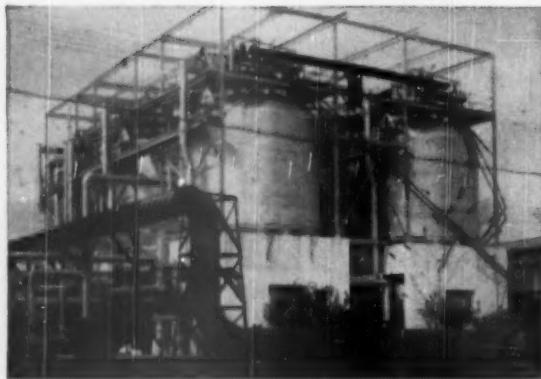
In Canada: Canadian General Electric Company, Ltd., Toronto  
In Mexico: Babcock & Wilcox de Mexico, S.A., Mexico City

Pulp & Paper, December, 1950, Vol. 24, No. 13. Published monthly except April, when publication is semi-monthly, at 71 Columbia St., Seattle 4,  
Wash. Subscriptions: U. S. and Canada, \$3.00; other countries, \$4.00. Reentered as second class matter Oct. 17, 1947, at the Post Office at Seattle,  
Wash., under the Act of Mar. 3, 1879, original entry as second class matter authorized May 20, 1927. Copyright, 1950, by Miller Freeman Publications.

# SULPHUR

\*Interesting Facts Concerning This Basic Raw Material from the Gulf Coast Region

## \*SUPERHEATED WATER . . .



Mining operations are most successfully carried out if the water pumped into the sulphur deposit is heated under pressure to a temperature of about 320° F. For large scale mining, enormous quantities of water are required, so, a primary requisite is an adequate supply of suitable water and an efficient power plant in which to heat it.

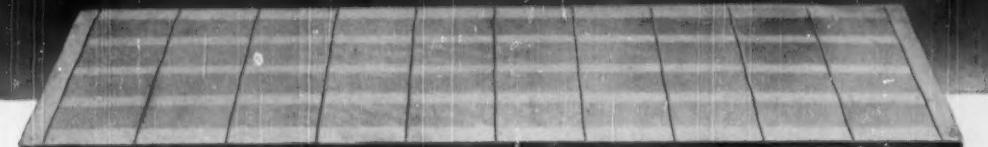
To insure a continuous supply of water at Newgulf, it is the practice to use river water pumped in time of flood or full flow and stored in large reservoirs. This supply is supplemented, when necessary, with well water. Water so obtained is seldom suitable for use in boilers or mine water heaters without being treated first because of natural salts in solution. Softening by chemical treatment is necessary to prevent deposition of scale on boiler tubes and hot water lines.

Loading operations at one of the huge vats of Sulphur at our Newgulf, Texas mine. Such mountains of Sulphur are constantly being built at our mines, from which shipments are continually made.



**TEXAS GULF SULPHUR CO.**  
75 East 45th St. New York 17, N. Y. INC.  
Mines: Newgulf and Moss Bluff, Texas

*They last longer,  
need less maintenance—*



*Photo courtesy Magnus Metal Corporation, Fitchburg, Mass.*

## **INCONEL** screen plates

by **MAGNUS**

Nearly eight years ago, a Canadian mill decided to see if they could get longer service life from screen plates. Up to that time, the best screen plates tried had failed through corrosion or fatigue, after only about a year of service.

Then, in 1943, they tried screen plates of Inconel®. Today — *nearly eight years later* — these Inconel plates look as good as new.

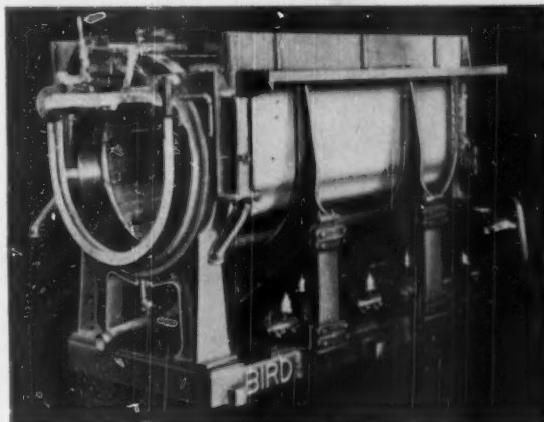
This long plate life can be credited to two outstanding characteristics of Inconel — exceptional resistance to fatigue and corrosion by mill stocks.

Inconel is virtually unaffected by chemicals used in the pulp and paper mill. And — because Inconel does not readily work-harden — it is capable of withstanding severe vibration and shock which often cause other metals to fail through "fatigue."

For further information about Inconel screen plates, write directly to Magnus Metal Corporation, Fitchburg, Mass.

If you would like to know how the versatile Inco Nickel Alloys can help keep costs low in your own mill, write to INCO outlining your metal problems. We'll be glad to help you find economical solutions to these problems.

**THE INTERNATIONAL NICKEL COMPANY, INC.**  
67 Wall Street, New York 5, N. Y.



*Inconel screen plates in position on a Bird machine. Photo courtesy Bird Machine Co., South Walpole, Mass.*

EMBLEM OF SERVICE  
**NICKEL INCO ALLOYS**  
1923-1950

MONEL® • "R"® MONEL • "K"® MONEL • "KR"® MONEL • "S"® MONEL  
NICKEL • LOW CARBON NICKEL • DURANICKEL®  
INCONEL® • INCONEL "X"®

## To get all piping from one source Standardize on the CRANE line

### PULP STOCK CAN'T CLOG THESE VALVES

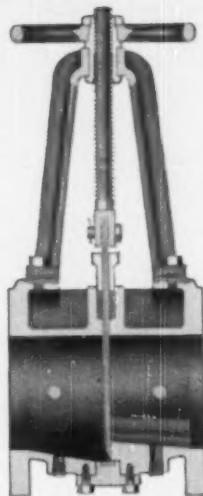
That's because Crane patented body design prevents large single accumulations of stock under the disc. As the disc closes, step-like notches in the body "comb" the trapped fibers into small bunches. These are easily sheared by the knife-edge disc. Cutting edge of disc is protected by seating against a lead filler in bottom of body.

You won't get clog-ups in other parts of these valves either. Crane no-hornet design eliminates areas where fibers can accumulate. Even the disc guides have outlets for solids that may collect as disc is lowered.

And when you want to wash out your pipe lines, these valves play right into your hands. Six tapped and plugged openings and the easily removable disc-stop holder facilitate flushing and cleanout.

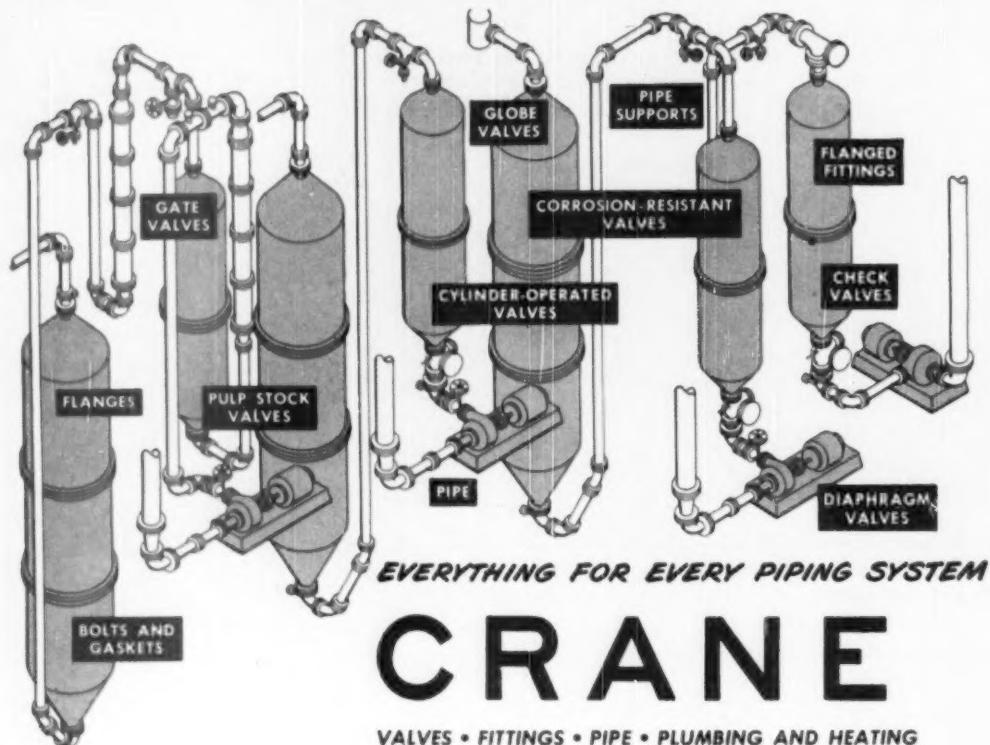
Regularly available in wheel-operated or quick-opening patterns, all iron or brass trimmed. Send for descriptive Circular AD-1740.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.  
*Branches and Wholesalers Serving All Industrial Areas*

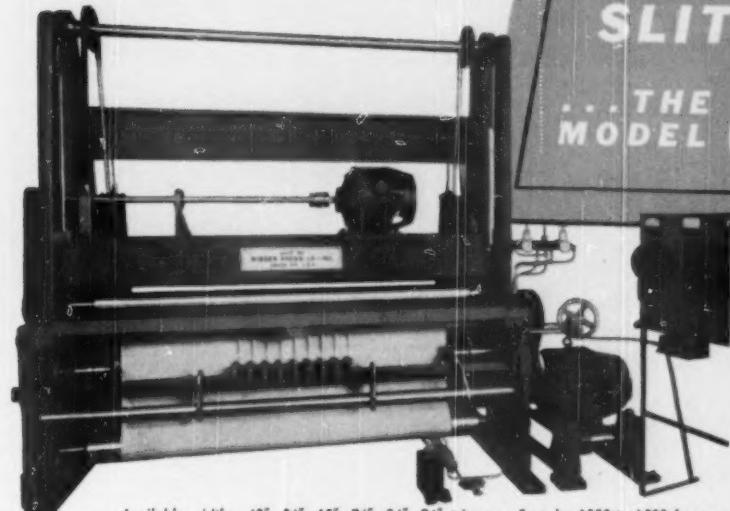


No. 1425 Pulp Stock Valve.  
Working Pressure: 60 pounds water. Sizes: 4 to 24-inch. Special materials, linings, and operating equipment available.

### THIS MULTI-STAGE BLEACHING SYSTEM CAN BE 100% CRANE-EQUIPPED... ON JUST ONE PURCHASE ORDER



# Kidder Announces



Available widths: 42", 54", 65", 74", 84", 94" trim... Speeds: 1000 to 1500 fpm, according to type of work... Standard Model: 26" Rewind Roll — Special Model: 40" Rewind Roll

*Rugged Enough  
To Slit 200 lb.  
Tag Stock...  
Accurate Enough  
To Handle The  
Lightest Tissue*

### G. T. Features For Easier, Lower-Cost Slitting

**Gears Eliminated**, resulting in greatly reduced upkeep and almost complete silence. V-belt replaceable without dismantling. Rotating members, except mill roll shaft, mounted on sealed anti-friction bearings.

**Motor Drive** sold as package, including M. G. set. Main motor and mill roll brake on right of machine. Kidder engineers will recommend motors of correct capacity.

**Shear-Action Cutting** severs web. Shaft-mounted, two-edged back cutters,  $\frac{3}{8}$ " wide, are driven slightly faster than the web. Ball-bearing front cutters, rotating by pressure against back cutters, are kept sharp by latter's harder metal.

**Slit Webs Are Wound** either on core or on a collapsible shaft, in cradle formed by two drums, under pressure

from a third above. The two drums are driven by main motor; top roll is driven by a rheostat-controlled auxiliary motor.

**Hardness Controlled** by varying pressure and speed of top roll assembly, which is heavy enough to wind the hardest roll. Pneumatic cylinder provides counterbalance ranging from zero to complete lift.

**Web Tension** is provided by water-cooled, rotating-disc brake. Actual tension control is through pneumatic diaphragm exerting smooth, flexible pressure on the two stationary plates.

**Bow Bar** helps smooth out wrinkles and handle baggy stock. Bar, adjustable as to angle, can press on web's center or edges, combining with the mill roll's bias adjustment to keep web straight and taut.

*Send for complete information on the quieter, smoother-working, cost-reducing Model G. T. Slitter*



- give you
1. Clean, Accurate Cutting
  2. High Speed, Dust-less Operation
  3. Easy Separation of Rolls

## KIDDER PRESS COMPANY, INC.

DOVER, NEW HAMPSHIRE

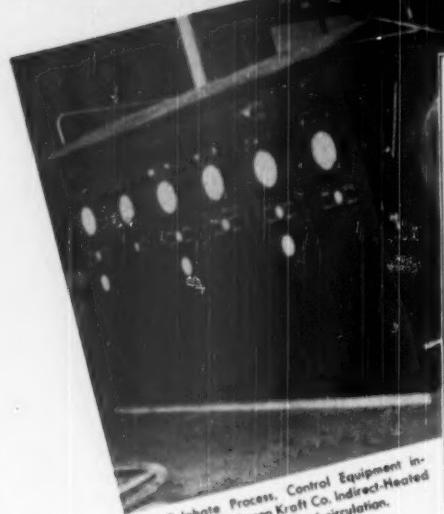
C. P. ROBINSON

Graybar Bldg., New York 17, N. Y.

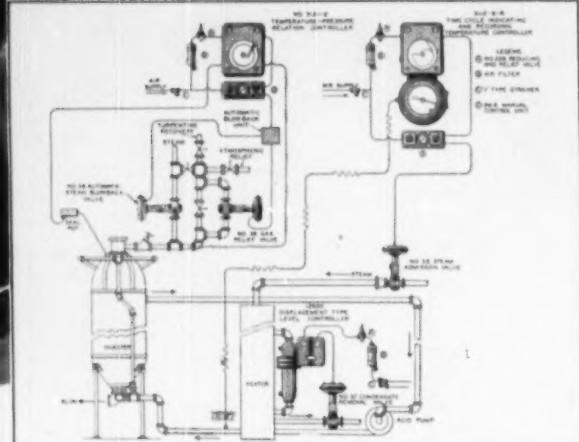
MACHINERY SERVICE COMPANY

5270 East Washington Blvd., Los Angeles 22, California

**YOU GET**  
***Increased Tonnage,***  
**More Uniform Cooks with**  
**MASONEILAN DIGESTER CONTROLS**



Sulphate Process. Control Equipment installed at Macon Kraft Co. Indirect-Heated Digesters having forced circulation.



Masoneilan Digester Controls eliminate the guesswork from the cooking process. They produce better, more uniform pulp at lower manufacturing cost. Once a cycle is determined, these automatic controls will repeat any selected program time after time.

*Look at the advantages you get with Masoneilan Digestor Controls —*

- Consistently uniform pulp
  - Low percentage of rejections
  - Uniformity from cook to cook
  - Low steam consumption
  - Uniform steam consumption
  - Improved gas recovery
  - Greater production of pulp

- Higher pulp strength
  - Lower bleaching costs
  - Standard Packaged Panel Units

**Investigate Masoneilan Digester Controls and other specialized equipment for better pulp and paper production.**



MASON-NEILAN REGULATOR CO.

1181 ADAMS STREET, BOSTON 24, MASS.

Sales Offices or Distributors in the Following Cities:  
New York • Syracuse • Chicago • St. Louis • Philadelphia • Houston  
Denver • Pittsburgh • Cleveland • Cincinnati • Tulsa • Atlanta  
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Albuquerque • Detroit • Charlotte, N.C.

AT PORT ALBERNI, B.C.

# Productive Log Barking

is "teamed up" with



# ADAMS

Automatic  
WATER  
FILTERS

To convert raw water into a tool that blasts bark from logs of any shape or size, Bloedel, Stewart & Welch installed a matched team of Adams Automatic Water Filters ahead of their new Hansel hydraulic barkers.

Of critical importance in the barker's continuous, fast production and low maintenance are the films of lubricating water for seal rings as well as for main and thrust bearings. Complete removal of abrasive solids from the Port Alberni water source was necessary if precision-machined surfaces in both the barker and the high pressure pumps were to deliver full performance.

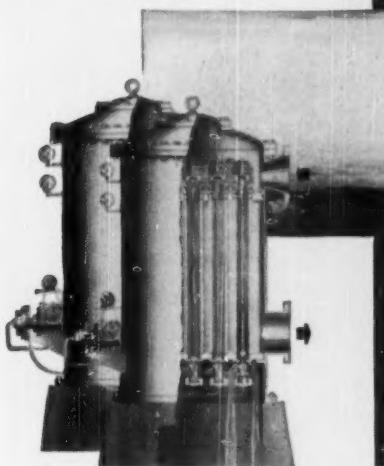
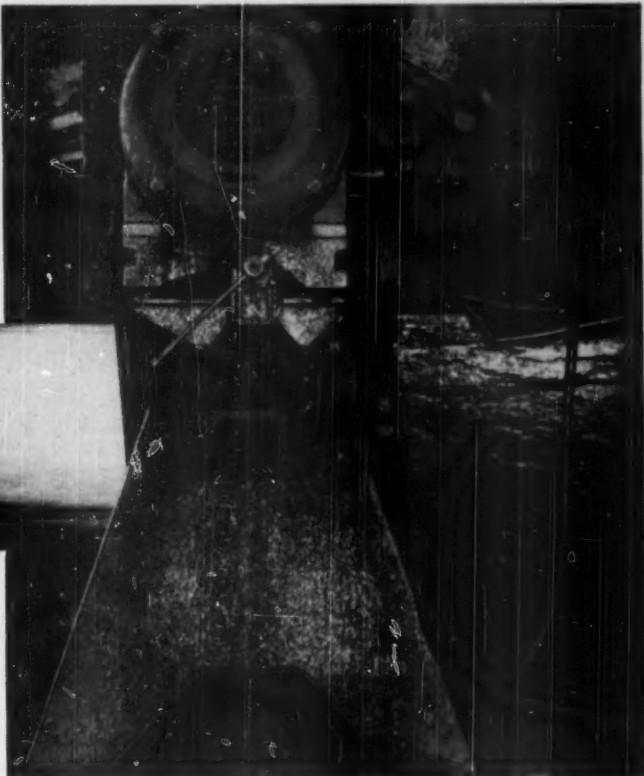
Experiment under actual conditions proved the need for a filter that would not only remove all solids down to 40 microns, but would backwash automatically — a clear case for the Adams AWF

Filter with exclusive Adams Poro-Stone Filter tubes. . . . Adams filters were installed and are performing admirably", states B. S. & W. resident manager.

If you would convert water — your cheapest raw material — into an efficient

production tool for pulp, paper, and saw mills, it will pay you to investigate the R. P. Adams line of water filters now.

Send today for new 20-page, full size Bulletin No. 691 on *Water Filtration in the Pulp and Paper Industry*.



ADAMS AWF WATER FILTERS

HANSEL 60" RING BARKER

R. P. ADAMS CO., INC.

210 E. PARK DRIVE

BUFFALO 17, N. Y.

# Depuma\*

for  
extra  
defoaming  
efficiency...

The whole trade is talking about new DEPUMA, the more efficient, more effective de-foamer. DEPUMA eliminates foam and bubble formation completely... with none of the drawbacks often found in ordinary anti-foaming agents.

An odorless, viscous emulsion, DEPUMA cannot emulsify or evaporate.

Here at last is a new de-foamer of unlimited capabilities, ready to serve throughout your plant, in screening... bleaching or on the wire. You will find DEPUMA safe and simple to use, as well as surprisingly economical.

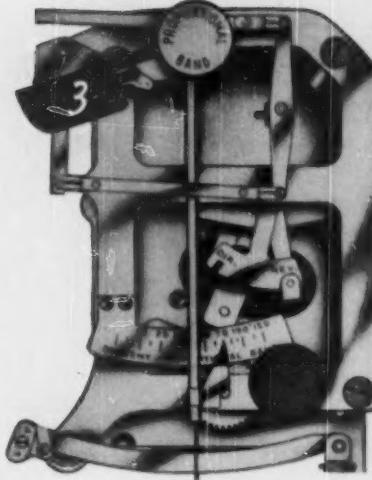
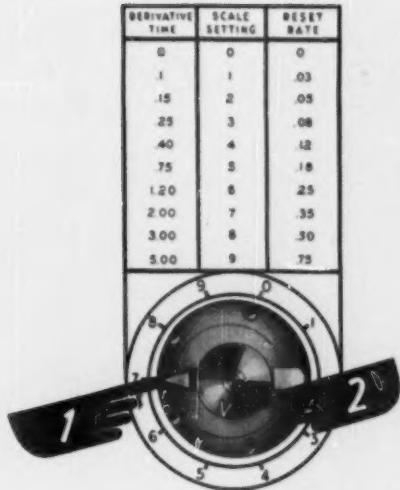
A.A.P. technicians will be happy to demonstrate DEPUMA at your plant. For detailed information on this important paper-making auxiliary, consult our nearest branch.



## AMERICAN ANILINE PRODUCTS, INC.

50 Union Square, New York, N.Y. • Plant: Lock Haven, Pa. • Branches: Boston, Mass.  
Providence, R.I. • Philadelphia, Pa. • Charlotte, N.C. • Chicago, Ill. • Los Angeles, Cal.  
Chattanooga, Tenn. • Dominion Anilines & Chemicals, Ltd. • Toronto, Canada • Montreal, Canada

\*Reg. U.S. Pat. Off.



**if you use... or plan to use...**  
**automatic control instruments**

you should investigate

these **THREE EXCLUSIVE ADVANTAGES** you get in

**BRISTOL series 500 air-operated controllers**

- 1. Reset Rate...**
- 2. Derivative Time...**
- 3. Proportional Band...**

ACCURATELY  
CALIBRATED  
AND  
EXACTLY  
REPRODUCIBLE

The reset scale is calibrated in actual reset rate. The proportional band scale is graduated in percent of proportional band. The derivative scale is calibrated directly in minutes.

This makes possible the exact duplication of controller adjustments for any process throughout a national organization.

It also makes possible the replacement of controllers on a process with full assurance that such replacements will exactly duplicate the performance of

the original—eliminates the cut-and-try method of arriving at the original setting—saves hours by cutting down on shut-down time.

Accurate reproducibility is only one of the many advantages you get in Series 500 Air-Operated Controllers which exemplifies the outstanding instrument engineering Bristol puts into its complete new line of Series 500 recording and controlling instruments—products of over 60 years of instrument experience.

Write for new Bulletin A120 on Series 500 Air-Operated Controllers. THE BRISTOL COMPANY, 142 Bristol Road, Waterbury 20, Conn.



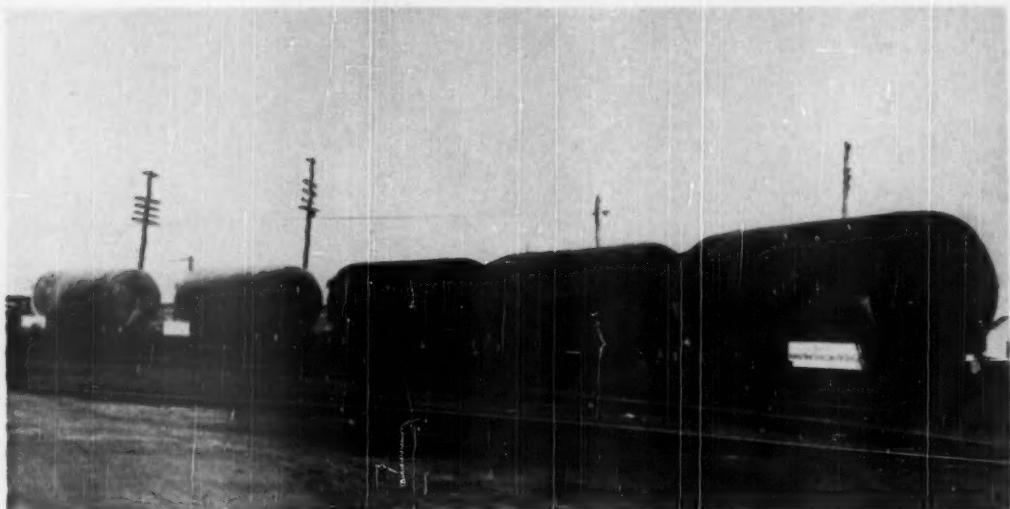
# BRISTOL

Engineers process control for  
better products and profits

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

---

## NEWPORT NEWS BUILT DIGESTERS



### Erected In Record Breaking Time

Newport News recently built the five digesters shown above for a large southern mill. Of welded construction they are 39 feet 7 inches in length with a diameter of 12 feet 9 inches. At the conclusion of erection the following letter was received from the mill:

"May we take this opportunity to advise you that in the erection of these digesters we found that all of the dimensions were adhered to exactly and all of the flanges were perfectly true and level. In fact, we were surprised that you were able to fabricate in such close dimensions, as every digester fit perfectly without any shifting or redrilling.

We feel that you did a splendid job in the manufacture of these digesters and wish to express our thanks."

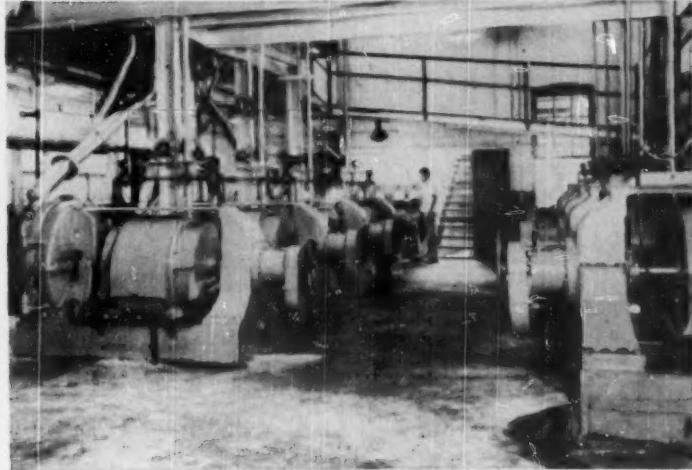
Write for illustrated booklet, "Facilities and Products."

## NEWPORT NEWS SHIPBUILDING AND DRY DOCK COMPANY

Newport News, Virginia

**Mills that  
compare**

## **Refiners**



Four 300 H.P. secondary refiners (on left)... note stock inlet piping—lubrication oil-flow indicators, and compact arrangement of instrument panel.



Front view of primary stage 400 H.P. refiners. First two units operating on shredded knots and screening... note discharge spout from shreds unit.  
Last three units operating on semi-chemical chips... note flexible dilution water lines and electric cable—swing head door side.

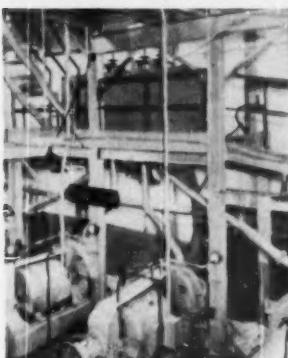


Front view—secondary stage refiners, showing stock inlet piping arrangement... note dilution water line at refiner intake.

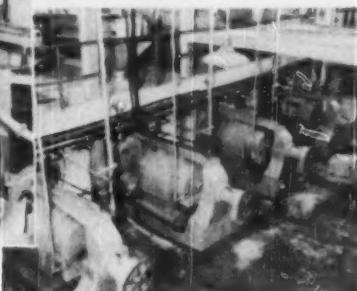
**choose**

**The GAYLORD Installation**  
A battery of 9 Sprout-Waldron Refiners  
of the Bogalusa, La. plant of  
Gaylord Container Corp.

## **Sprout-Waldron**



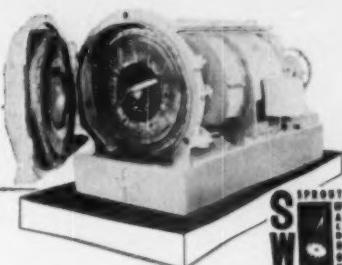
Individual view of secondary stage refiner illustrating stock handling system from regulating box to refiner... note ammeter, dial indicator and oil flow indicators.



Top view—primary stage refiners. Two units in foreground on semi-chem chips... note dewatering unit directly overhead.

Two units at extreme end operating on knots and screening... note Jeffery shredders located directly above. Note dial indicators—tail end.

**S**prout-Waldron Refiners, or "Sprouts" as they are dubbed in the industry, are sprouting up in mills all over North America. Let one of our field representatives tell you the facts about the fast-growing popularity of this equipment. Or, write today for Bulletin 41 to Sprout, Waldron & Co., Inc., 32 Waldron St., Muncy, Penna.



**—Sprout-Waldron—**  
*Manufacturing Engineers*  
SINCE 1848

MUNCY • PENNSYLVANIA

165

December 1950

11

# Profit MOST by using the BEST



**NOPCO\*** WAX SIZES not only assure  
**HIGHEST** Sizing Efficiency but **LOW** Sizing Cost

Nothing is more profitable than size that gives outstanding results and yet proves inexpensive to employ. That's why Nopco Wax Sizes are unexcelled. For example:

**Nopco 2252—Ready-to-use Emulsion**—is a liquid paraffin wax size that is without equal in beater application. *First:* Its extremely fine, chemically-produced particles (unmatched by those of physically-made sizes), plus its extraordinary alum sensitivity, assure excellent retention by the fibers and exceptionally uniform size distribution. Upon drying, the size is fluxed evenly thruout the sheet. *Second:* Nopco 2252, precipitated onto the fibers, is totally inert—and therefore not affected by water, temperature, or any of the other common causes of size failure. *Third:* Nopco 2252 requires much less alum per pound of sizing material added—resulting in considerable savings in alum cost. Available in 55-gallon steel drums.

**Nopco 2251 and Nopco 2251-B—Anhydrous Emulsifiers**—carry the greatest amount of paraffin wax consistent with good emulsion stability. Their small particle size (less than  $\frac{1}{2}$ -micron) and high alum sensitivity result

in excellent retention by the fibers. Eminently suitable for beater application. Solid in form, both Nopco 2251 and Nopco 2251-B permit substantial freight savings over finished emulsion types. Available in 70-lb. cartons.

**Nopco 2251-X—Anhydrous Wax Size**—provides a perfect balance of wax and emulsifier that enables a stabilized emulsion to be produced spontaneously by simply melting the mix and adding to hot water. An extremely easy-to-use creamy, waxlike solid. This Nopco product not only lowers the cost of size preparation, but also results in appreciable freight savings when compared with finished emulsion types. Available in 70-lb. cartons.

These and other Nopco sizes have been designed to fulfill the most exacting requirements—while affording exceptional "mileage" for each pound used. If you are not already using Nopco Wax Sizes for internal application, it will pay you to give them immediate trial. Call on our technical service representative today. He will gladly work with you—right in your own mill, if desired—and help you solve your sizing problems to best advantage.

\*Reg. U. S. Pat. Off.

**NOPCO CHEMICAL COMPANY—Harrison, N. J.**

*Formerly National Oil Products Company*

Branches: BOSTON • CHICAGO • CEDARTOWN, GA. • RICHMOND, CALIF.



*Another*  
**E-X-P-A-N-S-I-O-N**  
*Case History*

has been written in the Pulp and Paper  
Mill field . . . this time it is:

**Calcasieu Paper Company**  
ELIZABETH, LA.

The story of how Calcasieu increased its produc-  
tion from sixty tons of kraft paper to two hundred  
tons daily adds another progress report to the  
pages of Pulp and Paper Mill history.

We are proud of the fact that Warren was  
privileged to make an important contribution  
to the Calcasieu expansion program by supply-  
ing thirty-five Warren Pumps, which included  
the following services:

White water suction box seal pit to machine pit  
Broke-beater to chest  
Couch-broke to Saverall  
Machine Chest to secondary Jordans  
Clarified white water pump  
White water filtrate to screens, etc.  
Stock chest to rotary screen head box  
Black Liquor to washer dilution  
Black Liquor to evaporator storage  
Hot water for final stage wash showers  
White water chest to Paper Machine showers  
White water tank to Couch Chest  
Thickened stock to primary Jordans  
White water shower to screens, etc.  
Black Liquor to storage  
Black Liquor to second washer dilution  
Boiler Feed, Condensate and Mill Supply

Modernization or expansion —  
Process or Power Plant —  
it will pay you to specify:

# WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC., WARREN MASSACHUSETTS

**The Most "Advanced"  
ASBESTOS FELT**

**Brandon**

**"Scapa-Hall"**

No. 46 AA Heavy Duty 4 ply

No. 54 AA Medium 3 ply

***Special Features:***

- 1 High percentage of asbestos
- 2 Part of back is asbestos
- 3 Oversize cotton warp for strength
- 4 Designed and engineered to give high porosity and absorbency
- 5 Completely pre-stretched and pre-shrunk
- 6 Equipped with "Clipper Seam" if desired
- 7 Widths 105" to 280"
- 8 Proven performance and economy

**Morey Paper Mill Supply Co.**

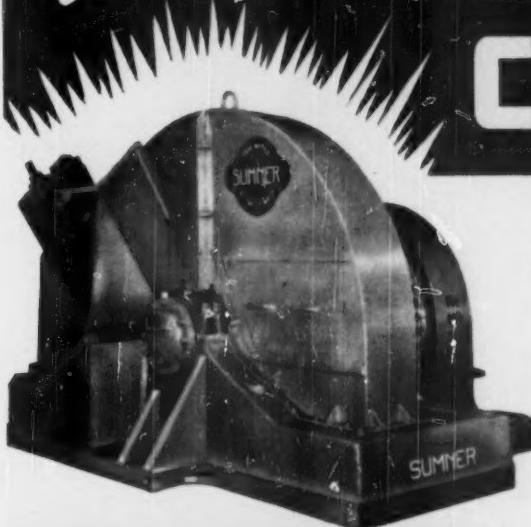
309 SOUTH ST., FITCHBURG, MASSACHUSETTS

Sole Distributors of Dryer Felts Manufactured by

**The Abney Mills, BRANDON Dryer Felt Mill**  
GREENVILLE, SOUTH CAROLINA

# SAWMILL WASTE CAN BE CONVERTED INTO CHIPS

*with the* **SUMNER**  
**72" B-KNIFE**  
**CHIPPER**



If you are interested in adding to your chip supply and, at the same time, save your own or your log supplier's standing timber to be cut in future years instead of now, it will pay you to investigate the possibility of converting applicable sawmill waste -- within an economical transportation radius of your plant -- into chips. Alert sawmill managers immediately recognize the long term value in converting their mill waste into a by-product which will produce a consistent and sizeable income for their mills.

In one Pacific Coast sawmill, a SUMNER 72", 8-Knife Chipper daily produces approximately 150 units (30,000 cu. ft.) of chips from clean edgings and trimmings for pulp mill use. This sawmill's customer reports that this chip source, besides being a consistent producer, furnishes the best chips that they are buying from any of their outside suppliers.

This is the production record from only one mill and there are SIX other SUMNER 72", 8-Knife Chippers now or about to be in operation. There are also other SUMNER 72" Chippers, with 4 and 6 Knives, in everyday use.

The sum total of the units produced daily by these 72" Chippers, only one in the series of Chipper sizes ranging from a 36" disc-diameter Re-Chipper up to the 175" Chipper -- the world's largest -- built by SUMNER, runs into astronomical figures.

SUMNER has a Chipper to meet every chipping requirement and information will be gladly furnished on request.

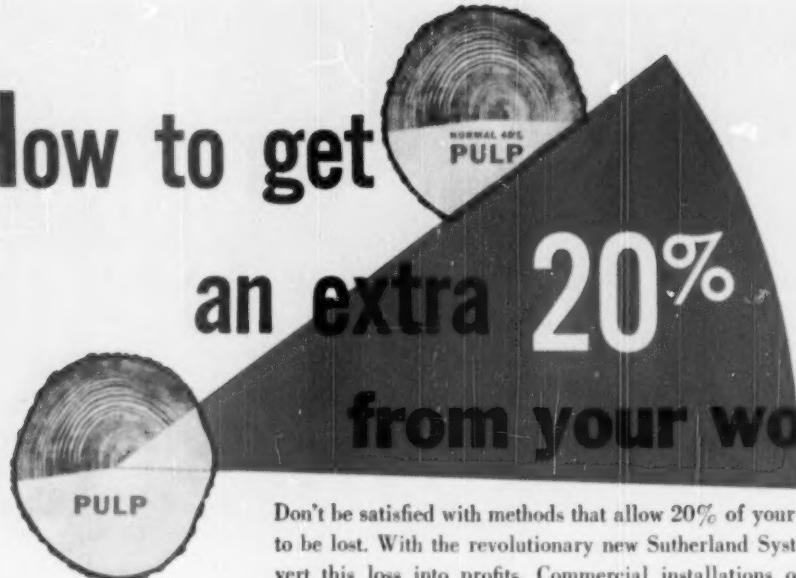
**INSTALLATIONS**

- St. Regis Paper Co.,  
Tacoma, Wash.
- Weyerhaeuser Timber Co.,  
Everett, Wash.
- Wood Conversion Co.,  
Cloquet, Minn.
- Weyerhaeuser Timber Co.,  
Springfield, Ore.
- Weyerhaeuser Timber Co.,  
Longview, Wash.
- Weyerhaeuser Timber Co.,  
North Bend, Ore.
- Weyerhaeuser Timber Co.,  
(2nd Chipper),  
Springfield, Ore.
- Longview Fibre Co.,  
Longview, Wash.

To be installed in late 1950 or early 1951.

**SUMNER**  
IRON Since 1897 WORKS  
EVERETT WASHINGTON  
In Canada: CANADIAN SUMNER IRON WORKS LTD., VANCOUVER, B.C.

# How to get an extra 20% from your wood



Don't be satisfied with methods that allow 20% of your potential product to be lost. With the revolutionary new Sutherland Systems you can convert this loss into profits. Commercial installations on a wide variety of pulps prove that you can save \$6.00 per ton through higher yield and reduced consumption of steam and chemicals. In addition, you have clean, strong pulp suitable for high quality board and paper.

## Kraft

High strength pulp  
from less wood  
with the  
**High Yield  
SULPHATE  
System**

## Sulphite

Strong, bright pulp  
at lower cost  
with the  
**High Yield  
SULPHITE  
System**

## Semi-chemical

Well-beaten, strong  
pulps  
with the  
**SEMI-CHEMICAL  
PREPARATION  
System**

# SUTHERLAND

Designed, Engineered, Serviced

continuous beating systems

by SUTHERLAND REFINER CORPORATION

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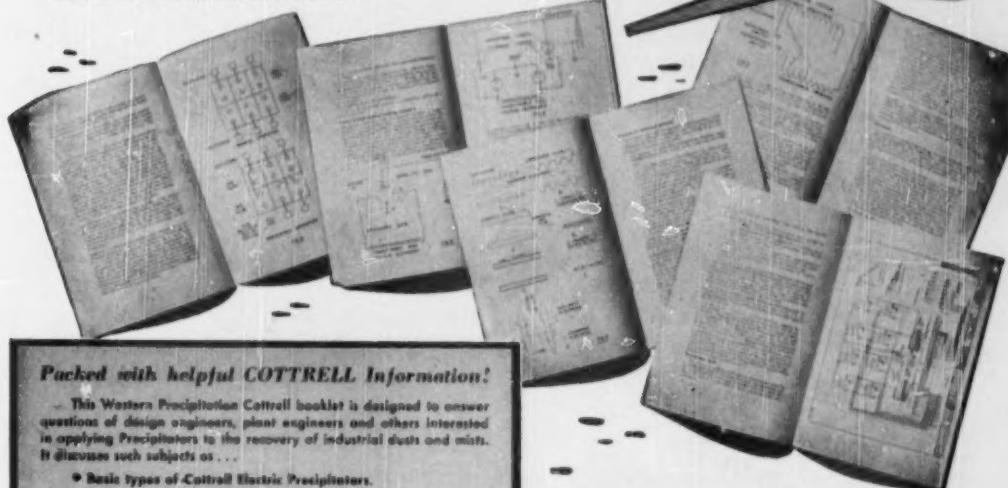
From Western Precipitation—the organization that pioneered the commercial application of Cottrell Precipitation...

**IF YOU ARE ENGAGED in any phase of industry where the recovery of dusts, fumes, fly ash, mists, fogs or other suspensions from gases is a problem, you will find this booklet on the COTTRELL Electrical Precipitator helpful and informative.**

Western Precipitation pioneered and installed the first commercial application of the well-known COTTRELL Electric Precipitator—Dr. Cottrell, the inventor, being a member of the company. And for more than 42 years Western Precipitation has consistently led in developing new COTTRELL advancements and techniques for recovering suspensions from gases, both wet and dry.

This 28 page booklet summarizes many of the basic facts you should know about modern COTTRELL Precipitators—the various types available, how they operate, principal types of electrode systems and rectifiers, shell constructions, etc. As long as the supply lasts, a free copy will be sent you on request to our nearest office. Ask for Bulletin No. C 103.

**28 PAGES**  
of helpful facts to  
know about  
**COTTRELL**  
**ELECTRICAL**  
**Precipitators**



#### *Packed with helpful COTTRELL Information!*

This Western Precipitation Cottrell booklet is designed to answer questions of design engineers, plant engineers and others interested in applying Precipitators to the recovery of industrial dusts and mists. It discusses such subjects as...

- Basic types of Cottrell Electric Precipitators.
- Principal parts of a Cottrell Precipitator.
- Mechanical and Electronic Rectifiers.
- Various types of Collecting Electrodes (rod curtains, corrugated plates, dual plates, pocket electrodes, etc.).
- Removal of Collected Material.
- Factors in Shell Construction (steel, concrete, brick, etc.).
- Operating Efficiencies and the Effect of Various Factors on Performance.

... and many other basic Cottrell facts. Write for your free copy of Bulletin C103 today while supplies are adequate!

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in all parts of the U.S.A. and foreign countries.

Western Precipitation is not affiliated with any other company in the field of electrical precipitation except its wholly owned subsidiaries, International Precipitation Corporation and the Precipitation Company of Canada, Ltd. Whether you are now contemplating the installation of a Cottrell Electrical Precipitator, or may be interested in such an installation at a future date, we can and will serve you in any part of the United States or other countries.

**WESTERN  
Precipitation  
CORPORATION**

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR  
COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

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TO  
ORDER!**

**NORTON**  
PULPSTONES

**THAT'S** what you get when you install a Norton Pulpstone—a stone tailored to produce just the right kind of pulp to meet your particular requirements. First the size and end shape are made right to fit the specific grinder for which you have ordered it [diameters range from 40" to 72", widths from 19" to 66"]. Then the kind of abrasive and its grit size, the grade (hardness) of the stone and its structures (grain spacing) are selected to produce your kind of pulp from your kind of wood.

Yes, you get minimum pulp costs when you get a Norton "Tailored-to-Order" Pulpstone.

**NORTON COMPANY, WORCESTER, MASS.**  
Norton Company of Canada, Ltd., Hamilton, Ont.

## The Rice Barton

# DynoPulper

-completes treatment of  
paper stock in one machine

### Other DynoMachines:

- The QuatroPulper is designed for processing stock in large capacities . . . either batch or continuous operation.
- The DynoChest is primarily for disintegrating stock in slush form . . . batch operation.
- The Dynofiner is for performing the same operation on a continuous basis.

**The DynoPulper** is a highly efficient machine for processing any type of pulp or waste paper . . . completing the stock treatment in one operation.

The DynoPulper employs two opposed DynoPellers (described below) which rapidly and economically reduce the stock to slush form . . . then continue the operation to completely separate the individual fibres one from the other. There is no appreciable drop in

freeness and no cutting or shortening the original fibre.

The fibre characteristics of the stock can be developed further by giving it additional time in the DynoPulper . . . eliminating the need for beating on many grades of paper.

### The DynoPeller

is the heart of all DynoMachines. Its concave face is lined with rough, hard carbide particles. As the DynoPeller rotates it causes a suction at its center that pulls the stock towards it. Centrifugal force then causes the stock to flow rapidly over the rough carbide particles. This effective dynomizing action completely disintegrates the stock . . . separating each fibre from its neighbor while maintaining its original length.



**Write for complete information.**

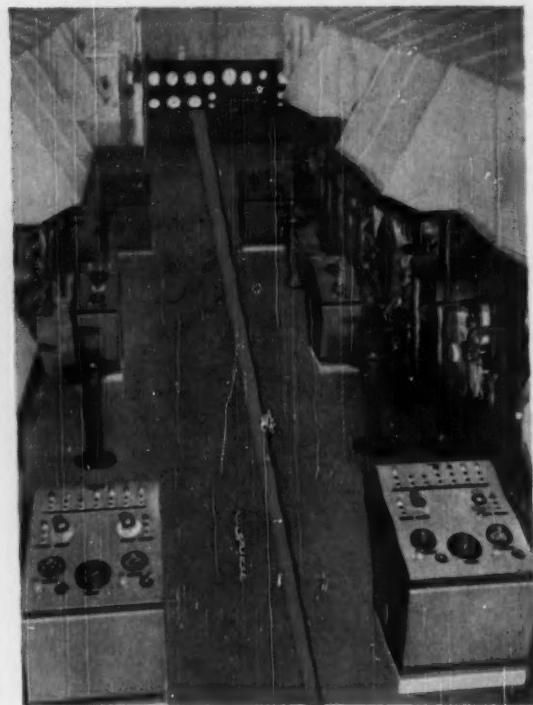
RICE-BARTON  
*Research Corporation*  
WORCESTER 1, MASS.

**MODERN  
MILL METERS  
STOCK FLOW  
WITH VERSATILE**  
**ElectroniK  
TACHOMETERS**



**advantages of  
ElectroniK TACHOMETERS**

- Instant, accurate knowledge of equipment speed.
- Permanent, easy-to-file record of speeds.
- Large scale and pointer easily read at great distances.
- Ability to record paper breaks and draws... as well as speed of machine.
- Ideal for centralized multiple recording, with individual indicating and recording at specific locations.
- Interchangeable major components simplify maintenance and reduces cost.



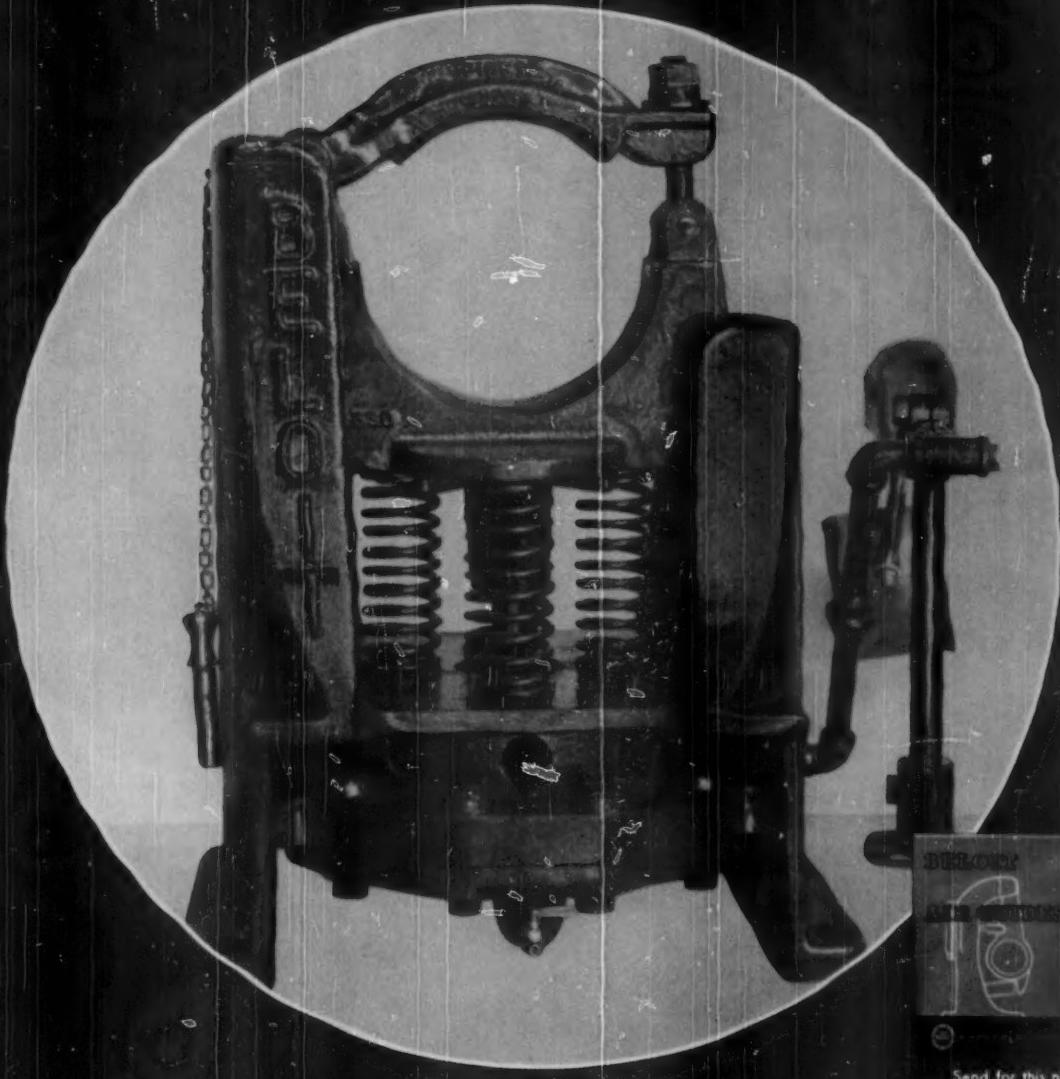
Stock Washers at Coosa River Newsprint Mill. Main Washer Panel includes ElectroniK Tachometers used as Stock Meters.

MANY paper mills are finding it increasingly valuable to accurately measure and record a great variety of speeds . . . all of which can be profitably handled with the versatile ElectroniK recorder. Although tachometers generally are considered only in terms of measurement of machine speeds . . . the ElectroniK principle permits a flexibility in application which includes measurement of stock volume, speed differentials and ratios, paper breaks and draws, as well as conventional speed in feet per minute.

Modern paper mills are turning to Brown Instrumentation. In the complete Brown line there are instruments which will insure higher quality, uniform production, reduced maintenance and better control of every important process. For more detailed information, call in your local Honeywell engineer . . . he is as near as your phone!

MINNEAPOLIS-HONEYWELL REGULATOR CO., Industrial Division, 4438 Wayne Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

MINNEAPOLIS  
**Honeywell**  
BROWN INSTRUMENTS



Send for this new  
Illustrated Story of Beloit  
Air Diaphragm Guides

### Air Diaphragm Guide . . . for economical modernization

This vertical air-operated guide for felts running either up or down is typical of the newest air diaphragm guides developed by Beloit. Smooth, precise and efficient in operation, these guides have received high approval from mills in which they have been installed. Because

Beloit guides are adaptable to any standard felt roll (thus eliminating odd spares), present equipment in a mill is easily and economically modernized. Standardization of design makes possible immediate deliveries.  
—Beloit Iron Works, Beloit, Wisconsin.

WHEN YOU BUY BELOIT...YOU BUY MORE THAN A MACHINE!



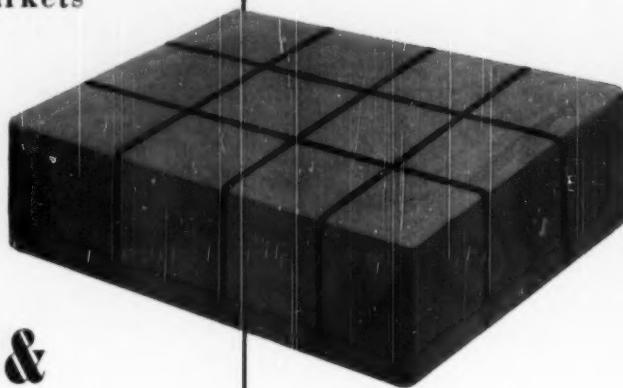
**BELOIT**  

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**PAPER MACHINERY**

# **Lyddon & Co.**

**exporters of wood pulp  
to all world markets**



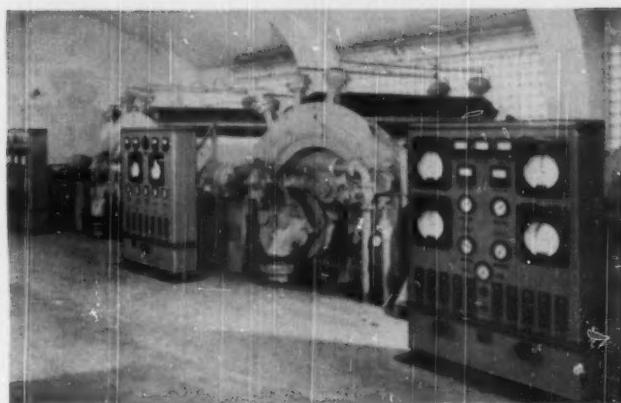
# **Parsons & Whittemore**

**paper exporters  
wood pulp**



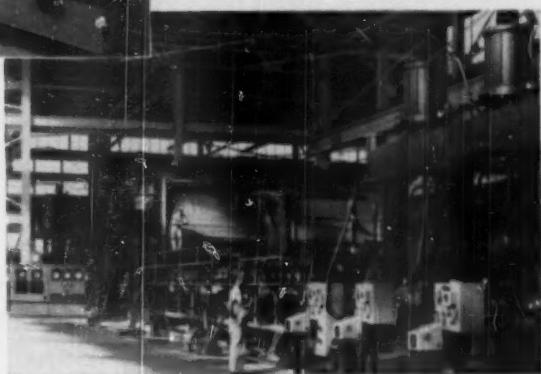
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**10 East 40th Street, New York 16, N.Y.**



pH control in your bleach plant will improve quality and save chemicals.

pH control on your paper machine will improve and maintain quality and permit higher machine speeds.



## Better Mill operation... Better finished product...

**with Foxboro pH Measurement and Control Systems**

Wherever pH is an important factor in your process, automatic measurement or control by Foxboro instrumentation can bring big improvements in results. It means brighter pulp in bleaching with minimum chemical usage . . . better quality paper at higher machine speeds . . . more reliable machine operation . . . or any of a number of other advantages.

### BASED ON DYNALOG ELECTRONIC INSTRUMENTS

Designed with the Foxboro Dynalog\* as the basic instrument, Foxboro pH systems take full advantage of the greater sensitivity and reliability of electronic circuits. The Dynalog provides flawless, stepless, continuous measurement or control through use of a simple variable capacitor. It has no slidewire, no batteries to standardize, no high-

speed motor, gears or galvanometer. Maintenance is eliminated, except for occasional replacement of standard radio tubes. Available in recording or recording-controlling models, Beckman glass electrodes are the primary measuring elements of Dynalog pH systems. They are suitable for use in nearly all types of liquids, regardless of color, viscosity, rate of flow, suspended solids, oxidizing or reducing agents.

### WRITE FOR COMPLETE INFORMATION

Whatever your requirements, there is a Foxboro Dynalog pH System to meet them. Consult your nearest Foxboro representative — or write for Bulletin 430. The Foxboro Company, 254 Neponset Ave., Foxboro, Mass., U.S.A. Branch offices in principal cities.

\*Reg. U. S. Pat. Off.

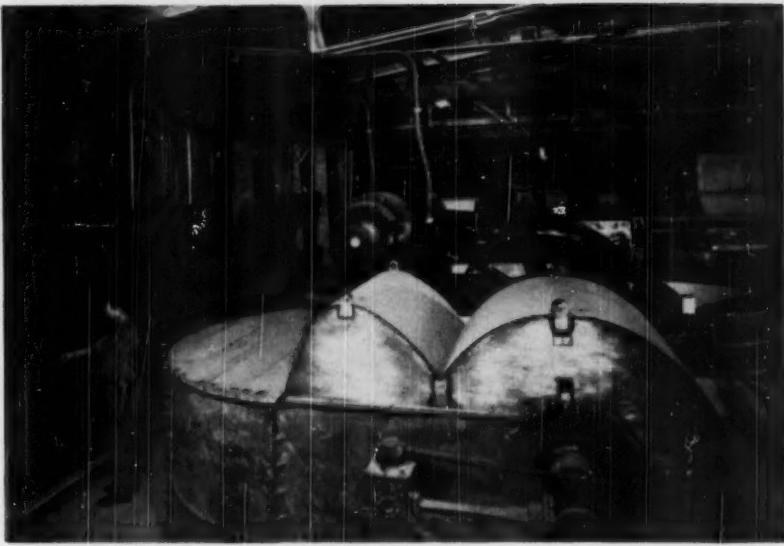
# FOXBORO

REG. U. S. PAT. OFF.

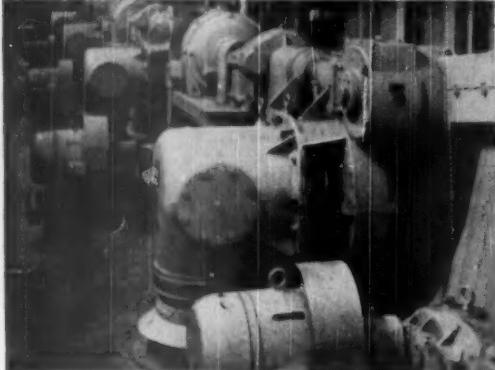
RECORDING · CONTROLLING · INDICATING  
**INSTRUMENTS**

**TEAMED TO BEATERS!**

In the Lee Paper Co. mill at Vicksburg, Mich., these beaters are driven by G-E wound-rotor induction motors, supplying the high starting torque required to dislodge settled stock. At left, an assembly of G-E Cabinetrol<sup>\*</sup> centralizes low-voltage motor control in compact units, factory-assembled for lower installed cost and metal-enclosed for better protection and appearance.



# Teamed to pay off at



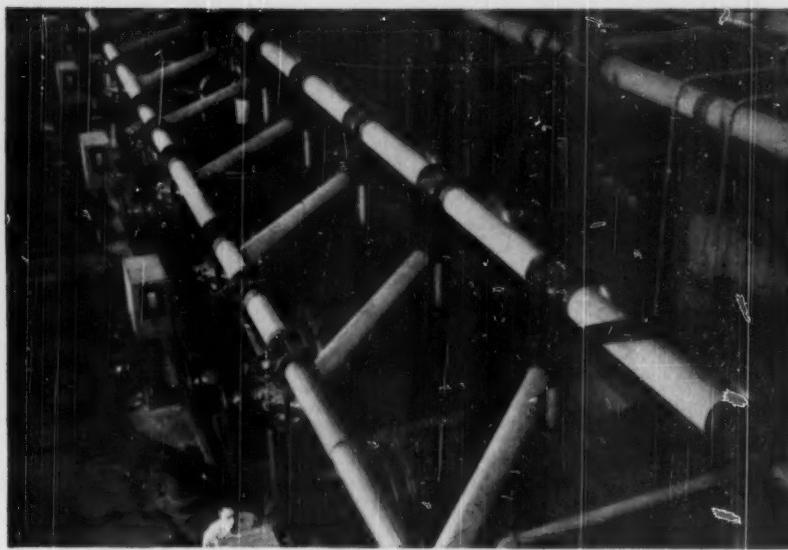
**TEAMED TO WASHERS!** In the Fibreboard Products, Inc., mill at Antioch, Calif., G-E speed variators (top), enclosed and separately ventilated, give economical, adjustable-speed drive for this multi-stage kraft washer. The floor-mounted G-E totally enclosed, fan-cooled induction motors driving the repulpers between stages are protected against corrosion, water, fumes, dirt and dust.

\*Registered Trademark of General Electric Company



**TEAMED TO REFINERS!** In a southern pulp and paper mill, these G-E 300-hp 2300-volt synchronous motors driving refiners are controlled by a lineup of G-E Limitamp<sup>\*</sup> controllers at upper left. Providing high interrupting capacity at minimum cost to protect high-voltage motors, Limitamp prevents costly repairs due to short circuits, safeguards the paper-mill's production continuity.

**GENERAL ELECTRIC**  
655-5



#### TEAMED TO JORDANS!

In the St. Regis Paper Co. mill at Tacoma, Wash., a battery of Jordans is driven by G-E synchronous motors. Advantages of these G-E Tri-Clad<sup>®</sup> motors include reliability, high efficiency, ability to improve mill power factor, and constant speed regardless of load. Dependable in operation, they're made by G.E. in low and high speed types, with various enclosures to meet paper-mill conditions.

# your paper machine!

**G-E equipment and services  
for pulp processing help  
maintain continuous production  
of uniform-quality stock**



**APPARATUS**  
**— to help cut costs  
in stock preparation!**

Teamed up with your stock preparation equipment, dependable General Electric drives reduce production interruptions, help assure uniform-quality stock. That means higher output at the paper machine!

**You get the right drive!** You may choose motors or turbines, constant speed or adjustable speed, from the wide G-E line. Thus you get the right drive for your pumps, beaters, refiners, agitators, washers, etc. . . . the proper enclosure for every paper-mill condition . . . the most economical voltage level . . . and the right control, full or reduced voltage, individual starters or centralized assemblies for lowest installed cost.

**You get equipment plus!** When you turn to General Electric, you get far more than fine electric equipment. You benefit from skilled engineering help on application problems—constant pioneering in new ways to cut paper-mill cost electrically—quick service from any of 30 service shops to keep your mill on the go—co-ordinated selection, manufacture, and shipment of electric equipment to simplify ordering, save your engineers' time, meet your construction schedules. That's why it pays to call in your G-E representative on your mill modernization plans. *Apparatus Dept., General Electric Company, Schenectady 5, N.Y.*

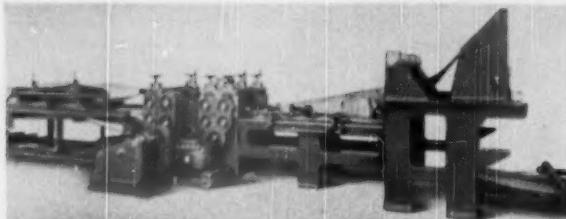
# THE SMITH & WINCHESTER MFG. CO.

PAPER MILL AND PAPER BAG MACHINERY

Plant and Offices

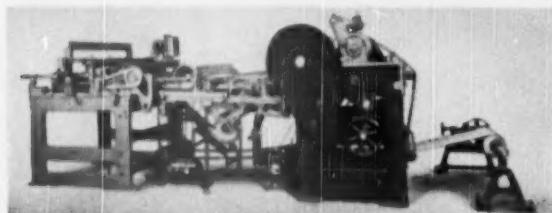


South Windham, Conn.



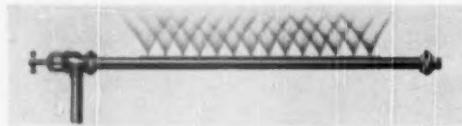
## MULTI-WALL TUBER

For the production of single and multi-wall valve notch tubes for sewed valve type bags. Machine built in 2 sizes, 20" and 26" face; tubes, 26" to 50" long.



## ROTARY SPOT CUTTER

Rotary Cutters for accurately handling large quantities of stock in finishing room. When equipped with patented photo-electric compensator, will accurately spot-cut pre-printed traveling webs. Built in 40", 50", 60", 71" and 83" widths. Layboy and stacker may be furnished.

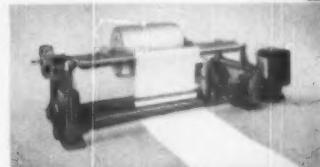


## SHOWER PIPES

The famous S & W "Rainstorm" Shower Pipe for greatest effectiveness and maximum economy.

## WEB CONTROL

Fully automatic electric eye, side register control or web feed. Manual control can be supplied.



## NO. 10 TYPE TUBER

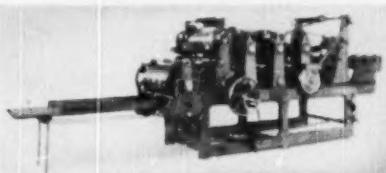
For pasted bottom, multi-wall tubes. Used in connection with S & W Bottomers or producing standard satchel bottom or valve bag. Fully automatic or manual control for web feed.

Complete information on any of the above equipment on request.



## MODEL "E" UNDERCUT TRIMMER

The S & W Undercut is the only undercut trimmer made. The Model "E" is newly designed for fast, effortless, accurate cutting and safe operation. Retains the outstanding features of the S & W Standard Undercut with many new features added for greater safety, accuracy and flexibility. Built in 56", 66", 76", 86" and 96" widths.



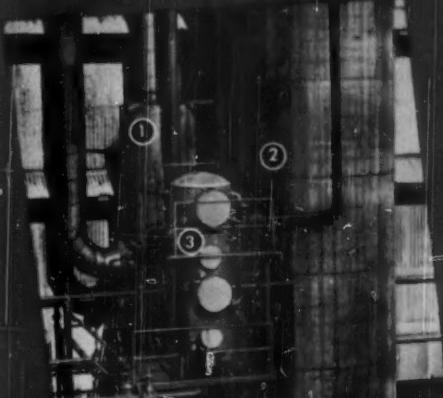
## 1/2 BEL BOTTOMER

S & W Bottomers are designed for high production and minimum spoilage with many new features for lowering bag production costs. Bottomers are made in several sizes. Produce standard satchel or narrow valve bottom.

SERVING THE PAPER AND PAPER BAG INDUSTRY SINCE 1828

## *harnessing* HEAT DOLLARS at St. Regis

### with FOSTER WHEELER BLOWDOWN RECOVERY SYSTEMS



At the St. Regis Paper Mills in Pensacola, Florida, two types of blowdown recovery systems are in operation. In the Vaporo-Liquid System (left) steam is condensed in the atmospheric condenser (1) and hot condensate is stored in the accumulator tank (2). This condensate, contaminated by some black liquor and pulp, is flushed under pressure and the resultant clean vapors heat mill water in the tubes of the flash heater (3).

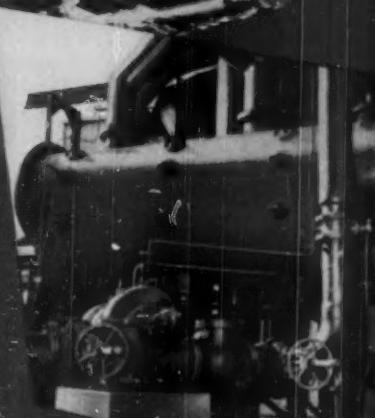
In the Surface Condenser (below) mill water flowing through the tubes is heated by steam condensing in the shell. The expansion chamber at vapor inlet prevents pulp from reaching tube bundles.



Properly engineered recovery equipment not only costs you less in the long run but increased operating efficiency and large fuel savings may also be enjoyed from the outset.

If you are contemplating improvements at your mill, our specialists on pulp and paper mill equipment will be glad to help you with your engineering problems.

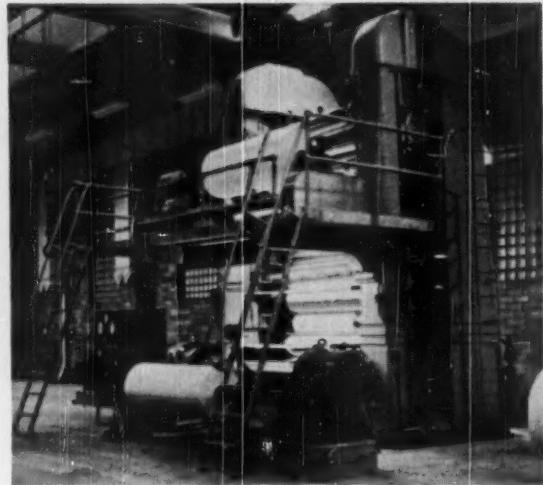
Foster Wheeler Blowdown Recovery Systems are discussed in the May, 1950 issue of Heat Engineering. Write for a copy.



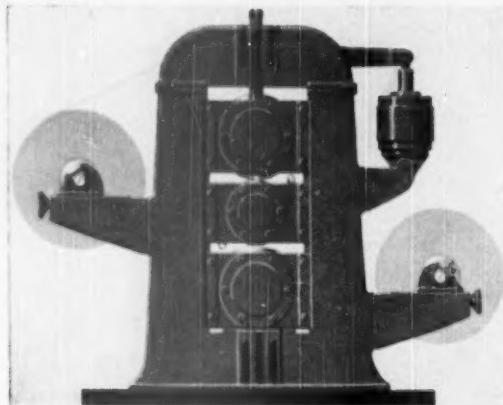
FOSTER WHEELER CORPORATION • 165 BROADWAY, NEW YORK 6, N. Y.

**FOSTER WHEELER**

**T**HE distinctive frames of the Appleton Supercalender have become a familiar feature in the finishing rooms of many mills manufacturing the finest high-finish papers, both in America and in Europe. Behind this singular construction are the very latest engineering advancements applied with an intimate knowledge of high-speed finishing requirements.



## **Higher Supering Efficiency • Improved Sheet Quality • Lower Operating Costs • Sustained High-speed Production • Precision Controls**



Many improvements in paper finishing and coating have been developed with the aid of Appleton Laboratory and Experimental Calenders. The lab stack can be furnished as a Supercalender, Machine Calender, Sheet Calender and as a Caliper Calender or in combinations. The Appleton five roll Experimental Stack duplicates mill operating conditions and results on trial runs.

**THE APPLETON MACHINE COMPANY • APPLETON • WISCONSIN**  
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Pacific Coast Supply Co. • San Francisco • Portland

# **APPLETON**

## ***Superfinishing Equipment***

# Bingham

PRECISION BUILT FIELD PROVEN PUMPS

## "Double Volute" HIGH PRESSURE Barker Pumps

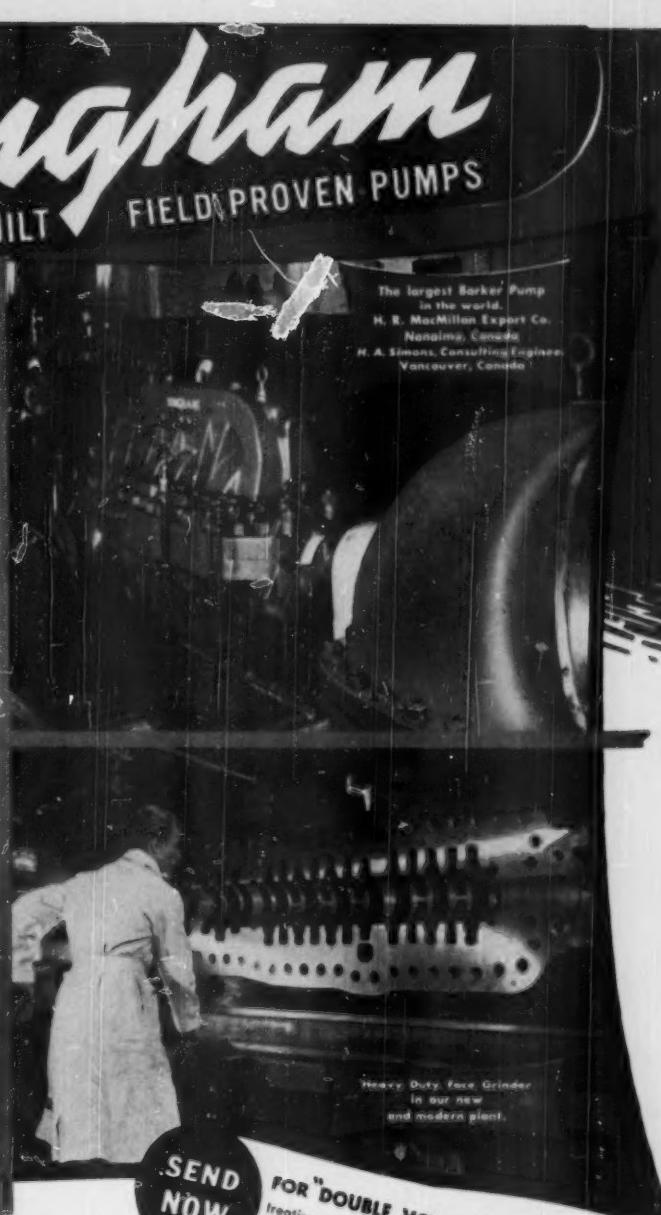
Bingham Multi-Stage Barker Pumps are of "Double Volute" design, insuring perfect radial balance — unusually short span between bearings — case bolts uniformly located close to shaft centerline — integral crossovers producing casings of maximum strength for high pressure service.

There are more Bingham High Pressure Barker Pumps now in operation and on order than the total number of pumps of all other makes used for this purpose.

### It takes Big Precision Tools like these to Build Pumps like this

Bingham High Pressure Multi-Stage Barker Pumps, like all Bingham products, are precision built. All parts requiring close tolerances are ground on heavy duty precision grinders. Pump case flanges of Barker Pumps are finished ground to perfect degree of flatness by heavy duty face grinders, which are typical of the precision machinery in our new and modern plant.

The largest Barker Pump in the world.  
H. R. MacMillan Export Co.,  
Nanaimo, Canada  
H. A. Simons, Consulting Engineer,  
Vancouver, Canada



Heavy Duty Face Grinder  
in our new  
and modern plant.

SEND NOW

FOR "DOUBLE VOLUTE"  
Circular describing the principle  
and advantages of Bingham  
"Double Volute" pumps.

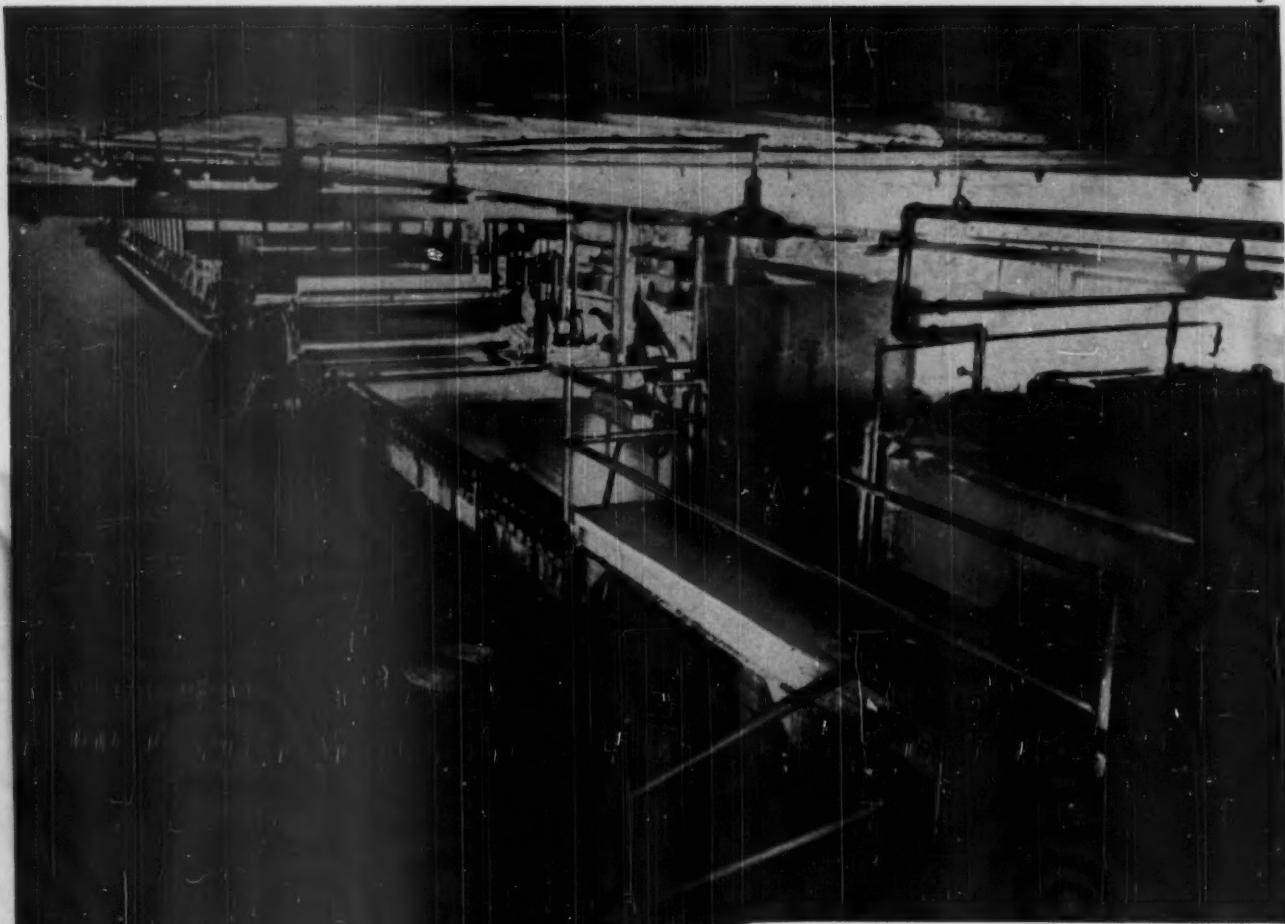


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*Here's another*  
**BAGLEY & SEWALL** machine at **CHASE BAG CO.**

This Bagley and Sewall Fourdrinier Machine is making kraft in the Chase Bag Company Mill at Chagrin Falls, Ohio. Among many innovations it has the Quick Wire Changing Type Fourdrinier with a wire 130 inches wide by 75 feet long.

Another Bagley and Sewall Machine producing paper efficiently and economically — one of the many running in mills throughout the United States, Canada, South America, Europe, Asia, and South Africa.

When contemplating new machines or equipment, write us. Our engineers will gladly consult with you regarding your requirements.

## **BAGLEY & SEWALL**

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DESIGNERS AND BUILDERS OF PAPER MAKING MACHINERY

WATERTOWN, NEW YORK

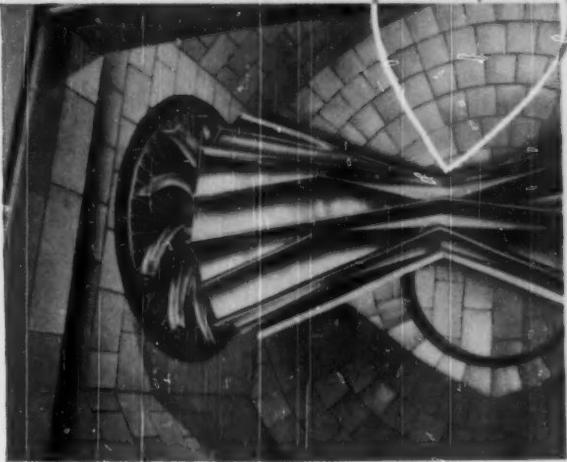
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630 Fifth Ave., Rockefeller Center, New York, N. Y.

## HEART of the <sup>ED</sup>**Jones**

### PULP-MASTER



Shown here — in a recent tile tank installation in a large midwest mill—is the rotor of the No. 4 size Jones PULP-MASTER.

This is the heart of the PULP-MASTER. Its powerful vanes quickly break up whole charges of baled material. The rubbing action of its impellers over the fixed radial-barred refining discs completely disintegrates the charge—baled pulp, waste paper or machine broke—in 10 to 40 minutes.

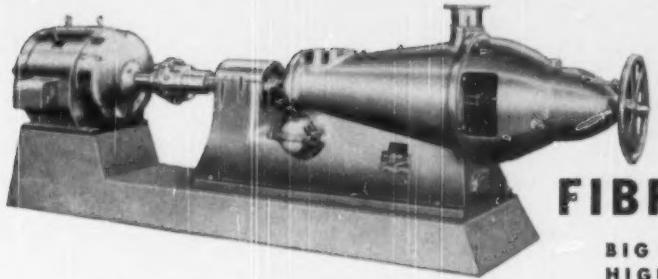
This customer\* writes: "We are quite proud of this installation, and very well pleased with the performance..." For more information, ask your Jones representative, or write for Bulletin EDJ-1019B.

\*Name on request.

E. D. Jones & Sons Co., Pittsfield, Mass.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

## TONNAGE



<sup>ED</sup>**Jones**

### FIBRE-MASTER

BIG BROTHER TO THE  
HIGH-SPEED REFINER

The Jones FIBRE-MASTER offers you the same flexibility, the same economy of operation and maintenance, the same improved stock control, which characterize its smaller counterpart, the High-Speed Refiner . . . Plus at least twice the TONNAGE.

Latest addition to the Jones line, the FIBRE-MASTER is already attracting widespread attention by its rugged simplicity of design, high efficiency and low operating cost. Ask your Jones representative for full information, or write us direct.

E. D. Jones & Sons Company, Pittsfield, Mass.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY



Due to the fact that certain folks in this world would rather hone a bayonet than eat, we are entering upon another "duration" of some magnitude. The implications of this are of recent and painful record.

The nation's paper mills will be asked to perform prodigies of production. Do it with a minimum of new capital equipment, too. Happy is the mill which sports modern Moore & White machines—or which bespeaks delivery of such paper-making equipment as we may be able to deliver in the days to come.

Manifestly urgent are measures, taken now, to spur aging equipment to the supreme effort. A Moore & White sales engineer can dream up

more ways of speeding up laggard machines of any make—of boosting tonnage while cutting operating costs —than you might believe possible.

Demand that one of these experienced specialists wait upon you, roll up his sleeves, unlimber his slide rule, and give for all he's worth. Ask him the cost of these goings-on and be prepared for one of life's pleasant surprises. He will not rest until he has rejuvenated your paper-making set-up from stem to stern.



### **The MOORE & WHITE Company**

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PHILADELPHIA 32, PA.

CUSTOM-BUILT MACHINES FOR MAKERS OF PAPER AND PAPERBOARD

Represented on the West Coast by Dan E. Charles Agency, 618 Jones Bldg., 1331 Third Ave., Seattle 1, Wash.

## industry wide

In processing plants throughout industry where cleanliness, corrosion, heat or abrasion are production problems, more and more engineers and designers are looking to TRENTWELD Stainless Steel Tubing for the answer.

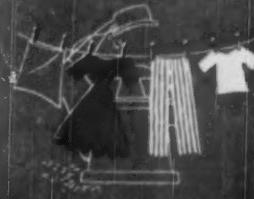
That's because TRENTWELD is made in a *tube* mill by *tube* experts . . . who roll and weld stainless and high alloy tubing *without* added rod metal. Developed by Trent specialists, this method results in tubing that is metallurgically correct and has a uniform section . . . with no zone of weakness for corrosion to attack.

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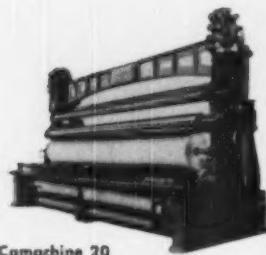


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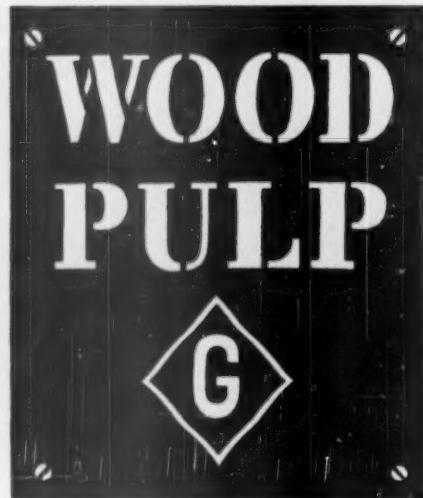


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# PULP & PAPER

*The Collector's Edge*

PRODUCTION AND MANAGEMENT ASSOCIATION  
OF PAPER MILLS

A MILLER FREEMAN PUBLICATION

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## An Idea for Selling More Paper

William Schneider, manager of KVP's Houston, Tex., plant, has come up with an idea for selling more paper which Glenn Stewart, KVP's ad manager recently published in the *KVP Philosopher*, which he edits.

It's this:

Persuade department stores and other general stores to put paper products, paper household items and even paper novelties in one department. Maybe a paper houseware department would be a good starter. Now, these items are scattered all over the store, tucked away in corners where even clerks can't find them. This would be a paper goods department to take care of many modern paper items, aside from the regular stationery or school and office supply departments, which would still have their proper function.

There have been so many new paper uses developed, it seems high time the department stores awakened this fact. They could sell a lot more of them this way.

## Those Dropping Water Levels

The patience and constructive manner in which the pulp and paper industry is taking part in the government studies of the water situation in the U. S. is typical of its leadership in recent years and a lesson to industry everywhere. Certainly the water situation is one for which the industry cannot be responsible as to quantity, but dangerously lowering water levels makes long-term planning almost an urgent necessity now.

The government is sponsoring these studies, which is well, but at the same time the people who created this government would certainly be justified in watching closely how this is done.

To men in power, their first thoughts might be to use this emergency as another means of gaining more power. In view of the past, and the way power authorities and other similar authorities over resources have been set up, aren't we justified in keeping an eagle eye on these water resources conferences, to be sure that while gaining an obviously much desired end, we do not create unnecessarily more centralized power?

Pulp and paper mills must be built on a site of sufficient water supply, and in the past the industry has taken its future water supply for granted. A mill will calculate its supply of wood and whether it will do, and take steps to insure wood supply. It cannot easily predict demands to be made on water supply, where there are many and increasing numbers of users. In recent meetings in the Midwest and New England, representatives of this industry have shown a responsibility and concern which reveal a regard for the community, the state, and the nation.

In fact, this industry steadily increases a natural ability to consider its problems in the light of the fundamentals of resources. There is little sense in talking of more newsprint mills, for example, until the available water and power and timber of an area are surveyed. Such a survey, area by area, might indicate that it would be best for Canada to keep its hold on the newsprint industry in the North, in the future as well as now.

As for imports of pulp, we know of old that foreign producers will export whenever they can and at a price as favorable as may be practical. That is the natural way, and until (and if and when) there is a duty on pulp, perhaps it would be better not to worry about foreign imports so much as to determine how many

more pulp mills can be built on the basis of water and power alone.

Congressman Celler recently was notably unsuccessful in getting top publishers to attack the newsprint manufacturers. Maybe something is dawning on them besides the cost of mills and tight supply. How many more newsprint mills can our water and present power serve, to say nothing of investment and timber?

The beginning of a survey that would tell much may well be in these little regional meetings on water, in which this industry is taking such an interest.

## An Idea for Personnel Divisions

Some of the mills report that they have issued a call to their employees to give them advance information if they are, or expect to be inducted into service or recalled to active duty, or if their plans are to volunteer. This advance notice or warning is very helpful to the personnel and payroll departments, and is a good suggestion for other mills.

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## NEWS IN BRIEF • • • AND BULLETINS

### RHINELANDER BUYS YEAST PLANT

Rhinelander Paper Co. has purchased all outstanding stock in the Lake States Yeast Corp. from the nine other former co-owner mills of the Sulphite Manufacturers Research League, according to Folke Becker, Rhinelander president. The purchased company operates a dried torula yeast plant built for an original cost of \$50,000 at Rhinelander, Wis., using half of the waste sulfite liquor from that mill for raw material. As previously announced Rhinelander is going to evaporate its residue liquor from both pulp mill and yeast plant in further search of marketable products. Jesse M. Holderby, now with Rhinelander as its by-products division manager, recently told a Wisconsin teachers' convention: "We stand at the brink of a period when first treatment plants capable of making major improvements in the sulfite pollution problem are about to be built."

### TAX ON SWEDISH WOOD PULP?

Indicative of thought on inflation control is a report current as we go to press—from usually reliable sources but not entirely verified as yet—that Sweden is considering an export tax of 75% on any increase of pulp prices above third quarter levels.

### "FLYING SCOTT" TAKES OFF AT CHESTER

Cutting a 315-pound Wisconsin cheese sent by Beloit Iron Works, engineers and paper mill men at Scott Paper Co., Chester, Pa., celebrated the take-off of the "Flying Scott," tenth machine and newest in the line, and the company now announces it is in 24-hour production. Beloit Iron built the new machine although Scott engineers contributed to many of its outstanding features, the company states. The name was selected from 4400 entries by Chester townsfolk and members of the sales force. Winner of \$100 for the selection was Robert Mulgrew of the finishing department.

### \$5,000,000 IMPROVEMENTS AT MACLAREN MILL

James Maclarens Co. at Buckingham, Que., is making extensive improvements at its mill and increasing power facilities with a view to converting pulpwood into groundwood pulp closer to the company's newsprint plant. Investment of \$5,000,000 is contemplated. Stadler, Hurter & Co., Montreal and New York, assisted in the planning of this project.

### LONGVIEW FIBRE STARTS UP NEW WOOD PLANT

A new wood preparation plant, designed for economic use of farmer wood, has gone into production at Longview Fibre Co., Longview, Wash. This addition will, according to R. S. Wertheimer, vice president and resident manager, break down small logs more efficiently and leave the main wood room available full time for processing larger logs. Farmer logs up to 8 ft. in length arriving at the mill by truck are unloaded by winch and fed to the new plant. Bark is removed by a 12 by 45 ft. Fibremaking Processes M-bar drum barker; converted to chips by a 90-in. Carthage 10-knife chipper powered by 600 h.p. motor. The plant has two Eeco log hauls and Link-Belt conveyors.

### SULFUR SUPPLY WILL BE SUFFICIENT

Sulfur will be tight, but the new price of \$22 will bring enough for the industry. That is consensus of best informed chemical and pulp men on subject of waning supply of that important yellow chemical. Sulfur producers have been moderate on price rises for years, but jump from \$18 was taken in hope it will encourage high cost production of sulfur by means of recovery units in connection with refinery operations. There are, say the experts, indications that such is the case. So pulp industry can breathe easier, because enforced demands abroad are likely to be high.

### UNION BAG ADOPTS NEW COATING

Union Bag & Paper Corp., Savannah, Ga., is one of the two or three mills which were first to adopt commercially polyethylene coatings and has installed a coating machine for this purpose. Polyethylene is the war-born chemical invented in England in 1936, made commercially for the first time in the U. S. in 1943. In a year it leaped from 15 million pounds production to 55 million pounds, has many unusual properties for a "wrap" paper in both food and hard products. Chief of them is moisture-vapor-retention and non-conductivity.

### MORE ITALIAN STRAW PULP

Following news of an initial trial shipment of neutral sulfite pulp from Italian wheat straw, first carried in this column, at least 2400 tons have been contracted for at this time, according to reliable import sources. It is understood the Italian producer is transferring some former British tonnage to the U. S., also hopes to sell about half of a proposed production to this country where it is being used chiefly as a mix with woodpulp.

### UNUSUAL NEWSPRINT PRICE STRUCTURE

For the first time in many years a multi-price structure exists in the North American newsprint field last month. International Paper increased its price \$6 a ton, while Powell River, Abitibi, St. Lawrence and others announced a \$10 increase and some stayed at \$100. It was generally expected that others would go along with the \$10 increase. As a result of the freeing of the Canadian dollar from artificial exchange controls and loss of about half the premium formerly enjoyed, additional revenue as a result of the price boost works out at about \$6 a ton on export, instead of the full \$10.

### OUR COVER PICTURE— PINE TREE IN LOUISIANA

The beautiful photograph we selected for our cover picture this month was taken by James Brennan, research chemist at Ecusta Paper Corp., Pisgah Forest, N. C.

However, he was many miles away from that mill when he snapped this fine picture. It was in a stand of pulpwood serving the International Paper Co.'s big mill at Springhill, Louisiana, and it was near Springhill, which is north of Shreveport.

It was close enough to Texas to bring to mind "the lone pine."

"I believed the tree represented the tremendous growth of wood for paper in that section of the country," said Mr. Brennan. He took it with a Kodak Junior on Super XX film at 1/100 second, at F32 with K2 filter. "The sun in summer in that part of the country is high in energy," he explained.



CHARLES A. LEE (left), Research Engineer, Kimberly-Clark Corp., Neenah, Wis., recently won one of the highest engineering honors, the Collingwood Prize for achievement from the American Society of Civil Engineering for a paper in 1948 on efficient use of ships canals.

HOWARD A. STONE (right), Riegel Paper Corp.'s sales representative in New England, who has been appointed Sales Manager for its "Upper Mills"—heading sales of all industrial specialties and printing papers from mills at Warren Glen, Riegelsville and Hughesville, N. J.

G. DAVIES PRESTON, 40, sales personnel manager of Scott Paper Co., Chester, Pa., died suddenly at Cambridge, Mass., in November. He was attending the three months advance management course at Harvard's graduate school of business administration. A graduate of Swarthmore College in his native city in 1934, he joined Scott in that same year and attained his last post in 1945. Surviving are his wife and three children.

### CALENDAR OF MEETINGS

- SUPTS. Miami Valley Div., Middletown, Ohio—Nov. 30  
SUPTS.—Pacific Coast Div.—Longview, Wash.—Dec. 5  
JOINT Meeting of Michigan Supts. and TAPPI, Kalamazoo, Mich.—Jan. 18  
CANADIAN Paper and Paper Association, Mount Royal Hotel, Montreal—Jan. 24, 25, 26  
PAPER WEEK—APPA and Salesmen at Waldorf-Astoria, TAPPI at Commodore Hotel—Feb. 19-23, 1951  
SUPTS.—National Convention—Multnomah Hotel, Portland, Ore.—June 24-29, 1951  
SALES MEN—Paper Industry—Midtown House, New York City—Every Mon. noon

# CONTROLS OUTLOOK IS CLOUDY

## May Extend Wood and Pulp Powers

Despite sporadic denials from Washington, a re-check of his sources in or close to the industry caused **PULP & PAPER**'s eastern associate editor to reaffirm the essence of his exclusive story last month—that transfer of mobilization handling of pulp and pulpwood (not to mention sawlogs and lumber) from NPA in Commerce to the Department of Agriculture was a moot subject in the nation's capital and an object of fear on the part of many thinking leaders in the industry. And talk of a possible corollary to such a move—western powers control and allocation—took a rising spiral due to international events.

But thus far it had stopped with talk, and a letter of protest from APPA, addressed to National Production Authority Chief Gen. Wm. H. Harrison, brought a reply from his assistant, H. C. Wild, that no such plan had been "officially" discussed and that NPA understood pulp and pulpwood to be entirely within the jurisdiction of NPA and Department of Commerce. This reassurance of present reality was comforting; but, in the minds of several leaders contacted by **PULP & PAPER**, did not quite lower the question out of sight.

However, as this issue goes to press, exclusion of pulp as well as paper from the priorities list of NPA's stiff Regulation No. 2 had been delayed, although there was optimism about such exclusion, as was the case 30 days earlier. But contributory to doubt was the presence of Red China troops in North Korea and the possibility of a winter campaign. A man very close to the entire pulp situation was stronger than ever in foreseeing possible eventuality of western powers control and allocation, and an import expert with a widely known pulp and paper brokerage firm, stated he was convinced such a move was due in 1951 and possibly early in that year. The latter source looked for a revival of the old "M" allocation orders or equivalent, and stated that many foreign producers, visiting the U. S. in November, and notably closer to the world scene than many a U. S. mill man, were jittery about the prospects of the pulp allocation on a world basis. The brokerage man, unlike the pulp industry expert, leaned toward the theory of tough U. S. control of its output rather than western powers control.

From a reliable source **PULP & PAPER** learned that ECA had made an exhaustive survey of the pulp situation as to price and production; and the news hinted last month in these pages—that the UN Food and Agriculture Organization's forestry division made a pass to engage in wood products jurisdiction and was turned down to favor ECA's plain duties—has been verified.

Most industry men believed the Ad-

### "PAPER RUNNING OUT OF OUR EARS"

Paper is being produced by U. S. mills at a rate that will show an increase of 3,000,000 tons in 1950 over 1949—practically a 16% increase in one year, but consumption has not increased to the same extent, Dr. Louis T. Stevenson, economist of the APPA, recently told the Packaging Institute in New York. He figures 1950 consumption at 27,000,000 tons, including 5,000,000 tons of imported newsprint, only 3,000,000 over 1949. Inventories of wood and pulp, however, were low in midyear, and paper mill backlog orders jumped 64% from June to August. With pulp being produced in the U. S. at record annual level of 14,500,000 tons and imports at rate of 2,400,000 tons, he foresaw consumption of 16,000,000, leaving inventory of 900,000 tons. Government defense needs will be easily met and "when this scare of inflationary buying eases we will find that paper is in such abundant supply there will be paper running out of our ears," said Dr. Stevenson.

visory Committee of the industry would be notified in advance of any drastic changes of mobilization jurisdiction and this able committee, many of them veterans of the old WPB, were girded for any possibility. Work with Commerce and NPA was going most smoothly via LeRoy Neubrech, chief of NPA's pulp and paper division, this magazine was informed by many of the committee. Visitors to Matthias Niewenhous, alert head of forest products for the all-powerful NSRB, which any day could show full strength, found him cool and calm and against any purely bureaucratic moves into regulation and control beyond the present time.

World events which, in the minds of several observers of the industry, might enhance the climate for western powers controls were these: Acheson's favorable impression of France's proposal that its rearmament and rehabilitation program include "supra-international authority" on commodities as well as arms; continued uncertainty in Korea and now Russia's position with regard to entry of Red Chinese; move of FAO of UN asking food control and a "world authority" for its gathering, storage and distribution.

Greatest weakness of the industry, **PULP & PAPER** was told by three sources (one an industry man in government), has been its failure to insist on a more separate identity from "wood products" and lumber. "The pulp and paper industry is bigger by far than sawlogs and lumber," said the Washington man, "but through reticence or ostrich-hiding it has made no strong, united effort this war or last to exert its individual industry power."

One significant development on chemicals brought out clearly that an exclusion from priorities of NPA Regulation No. 2 might be a two-edged sword. Without "DO" or "AEC" orders, pulp mills could pass on to chemical suppliers no enforceable urgency in ordering their wants. Equally important, neither could paper manufacturers. Among the most vital chemicals on the very short supply list this fall is sulfur. Its suppliers have raised the price to \$22 to encourage synthetic production.

### Believes Emergency Can Be Met By Voluntary Action



Forewording a booklet which illustrates the great increase in productive capacity in ten years of Weyerhaeuser Timber Co.'s varied wood use plants, J. P. Weyerhaeuser, Jr. (in picture), president, wrote:

"Only five years after the close of World War II we find the peace of the world again imperiled. No matter what may lie ahead, our company's obligation is to provide its full measure of forest products so necessary to a strong defense of our country and her United Nations allies. To adopt the attitude of 'business as usual' now would be shirking our duty."

"I hope and believe that the emergency can be met by voluntary actions of industry and individuals, rather than by government regulations, wage frenzies and other regimentations. These may be necessary in an all-out war, but as individuals we must realize that true freedom is the very principle for which we are producing and fighting."

### Levi LeRoux Dies On Trip to West Coast

O. L. (Levi) LeRoux, long-time manager of The Northwest Paper Co.'s Brainerd, Minn., mill, died suddenly Oct. 22, at Millwood, Wash., while on his way west to join his son, Russell J. LeRoux, mill manager, Weyerhaeuser Timber Co. pulp mill, Everett, Wash.

The elder Mr. LeRoux was 72 years. His wife was with him in Millwood, near Spokane, where they were visiting friends. He had retired as mill manager at Brainerd about two years ago but continued in an advisory capacity. Another son is an engineer with The Northwest Paper Co. at Cloquet, Minn.

### To Talk in Kalamazoo

Dr. Allen A. Stockdale, staff speaker, National Association of Manufacturers, New York, is to address the Jan. 18 joint meeting of the Kalamazoo Valley Section of TAPPI and the Michigan Division of the Superintendents' Association, at Kalamazoo. Dr. Stockdale was a luncheon speaker at the Superintendents' convention in 1949, in Atlantic City.

# RECORD EXPANSION

**Here Are 26 Machines—And That Ain't All**

**\$135,000,000 Invested in B. C. Alone**

The word was being passed around in industry circles last month—and very likely it was apocryphal—that there were more paper machines ordered in the month of September than in any month in all the long history of papermaking!

We tried to substantiate it and got nowhere. In fact no single paper machine builder of the "Big Seven" would say that, individually, its orders had reached a record peak that month, but it was possible the combination would make an all-time high. Part of the activity is due to the finalizing of various ECA-sponsored projects—a sign of returning vigor in Western Europe.

An all-time record regarding new machines could probably be figured for some period in the latter part of 1950—if not for September. Certainly, in some areas of the continent there were more machines either started up or ordered in the last half of 1950 than in any similar previous period. One machine builder told PULP & PAPER it considered the uptrend is a healthy response to the coming partial defense economy.

The big boom areas were in the state of Florida and the South generally, the state of Washington and the province of British Columbia. Wisconsin, New York and Pennsylvania, to a lesser degree, were participating.

There was a prospect of three more machines in Florida alone, including the well-under-way doubling of capacity at Hudson Pulp & Paper's Palatka operations where a new Pusey & Jones 234-in. kraft machine is going in.

#### **St. Regis's Florida Plans**

St. Regis Paper Company announced acquisition of an option on a 1700-acre site at Eastport, near Jacksonville, Fla., for a new pulp and paper mill. The mill, it was stated, would be a part of an expansion program in the Southeast by St. Regis, which has two mills at North Pensacola, across Florida. The company states it is well-fortified for expansion in its Southern mills with 450,000 acres of timberlands, in addition to rights to 218,000 acres of longleaf slash pine in Georgia's Suwanee Forest.

The new mill at Eastport, if carried through, would add 100,000 tons a year of kraft paper to the company's present Florida capacity of 150,000 tons of kraft paper and board.

PULP & PAPER's Southern editor sends a sketch showing the Eastport mill site as just a few miles northeast of the National Container mill at Jacksonville, on the same side of the St. John's River, at its confluence with the Broward River, and one mile east of the Imeson municipal airport and three miles east of Jacksonville limits.

The Florida Times Union of Jackson-

ville stated the Eastport mill would cost \$10,000,000, and employ 1,000, with \$3,500,-000 payroll. The tract is part of 1,500 acres owned by Brooks-Scanlon and site of its sawmill before it was moved to Foley, Fla. The Florida State Board of Health, through David H. Lee, sanitary engineering director, says "there is no reason to anticipate danger to fish or aquatic life." Half the mill water will come from the brackish Broward, the rest from wells. There is a 3-foot tide at the National Container mill.

#### **Other Southern Projects**

As for other projects in the South, I.P.

is pushing ahead with its 80% expansion at Moss Point, Miss., with addition of its 200 in., 200 tons-a-day Beloit machine, and another Beloit is going in at Chesapeake's Franklin, Va., mill. Brunswick Pulp's expansion from 290 to 400 tons at Brunswick, Ga., is shaping up; Riegel Paper Corp.'s 200-ton pulp mill at Acme, N. C., has been under construction since early summer; and money is being raised for a possible newsprint mill at Butler, Ala. H. & W. Paper Co.'s increase at Mobile this year is 50%. The Prescott, Ark., mill of Dierks Lumber and Ozan Lumber joint planning is temporarily tabled. Of course, it has only been a few months since I.P.'s Natchez, Miss., dissolving kraft pulp mill came into production, and earlier this year the two machines at Coosa Pines, Ala., and one at Crossett, Ark., added to the South's output.

## MORE MACHINES IN SOUTH?

Addition of third newsprint machines at both the Coosa River Newsprint Co. in Alabama and the Southland Paper Mills in Texas, bringing the total of machines making newsprint from Southern pine to six, was urged by the newsprint committee of the Southern Newspaper Publishers Association in its recent convention at White Sulphur Springs, West Va.



In fact, the committee reported that Southland is giving "serious consideration to adding a third machine."

And President Clarence B. Hanson, Jr., (shown in picture), Birmingham, Ala., News, who was himself one of the leading

figures in founding the Coosa Pines, Ala., enterprise, declared the association should not sponsor any new mills "until, and if, Coosa and Southland demonstrate their inability or unwillingness to increase their production to match our growth."

He asserted it should be the association policy to encourage the two existing mills, "in which we have financial and other interest," to add two more machines.

The newsprint committee also urged a permanent committee of publishers and newsprint manufacturers to develop better understanding between the two groups.

Part of the committee report follows: "We have been informed that the executives of Southland have given serious consideration to the possibility of adding another producing unit to their plant. They are satisfied the raw materials are present in sufficient quantity to sustain additional production, but their studies showed that construction and equipment costs will run considerably more than for the second papermaking machine that was completed in 1948.

"Since our last convention two projects for the erection of newsprint mills in the South have come to our attention. One of these is Paul D. Hammacher and Associates, operating as the Ornappa Co., agent for the Choctaw Pulp & Paper Co., for the erection of a mill in Alabama.

"The Meridian (Miss.) Chamber of Commerce has been working with Mr. Hammacher, also some banking interests in Butler, Ala. Mr. Hammacher announced recently that it would be early next year before his group would be able to make a start on the project.

"The other newsprint mill project is being promoted by the heads of several lumber concerns in Southeast Arkansas. The site selected for the mill is near Prescott, Ark. They have announced that the war situation has necessitated a postponement of their plans."

#### **Three Machines Ordered in Washington**

A phenomenal papermaking increase in the state of Washington—heretofore re-

nounced mostly as a market pulp state—is an important development of past weeks, and this may account for part of the legend about the September record in orders, though one or two were actually placed later.

Weyerhaeuser Timber Co. has ordered a 216-in. wire Beloit board machine for a second kraft mill to be built for that company at Longview. It already has a market kraft pulp mill there.

Everett Pulp & Paper Co., Lowell, Wash., will increase its 80 tons output by 50% with a new 168-in. wire width Pusey & Jones machine designed for 1,200 f.p.m. of coated, super and other papers.

Longview Fibre Co., in Longview, recently put in the third recent order for a paper machine in the state of Washington alone—their's to be a 200-ton-a-day, 144-in. Moore & White Fourdrinier machine for kraft wrapping and container board.

Besides these machines on order, Washington-Idaho mills have two other machines which are, or soon will be, starting up. Pacific Coast Paper Mills of Washington, at Bellingham, started up its new No. 3 Beloit Fourdrinier tissue machine—84 inches—in October. About Jan. 1, Potlatch Forests, Inc., Lewiston, Idaho, will make kraft paper on its new Rice, Barton machine, the market to be substantially on the Pacific Coast.

Crown Z is speeding up several machines at West Linn, Ore.; St. Helens Pulp & Paper in Oregon is installing a new Yankee dryer to a machine to increase output; in California earlier in the year, two machines—Black-Clawson and Pusey & Jones—were started up at Fibreboard's new East Antioch mill.

Now comes word that Angelus Paper Box Co., Los Angeles, has started a program to increase paperboard output to 30 tons a day, according to Bob Stevens, Los

Angeles consultant. It has moved its corrugated box plant into a new building. A new Sharle Jordan, driven by Westinghouse 130 h.p. motor, and a \$60,000 boiler of 500 h.p. are ordered.

In the Middle West, Thilmany Pulp & Paper, Kaukauna, Wis., is adding a Fourdrinier to triple its glassine output; Finch, Pruyn & Co., in New York, is getting a Pusey & Jones 110-in. Fourdrinier; Howard Smith Paper Mills plans a machine at Cornwall, Ont., to increase output 50%; additional machine coated paper output on machine at IP's Hudson Falls, N. Y., mill, 28,000 tons yearly, begins in early 1951; Lee Paper in Vicksburg, Mich., is adding a 130-inch Beloit machine; Brown Co. and Westfield Paper and others in the East are speeding up machines. Scott has just started up its new Beloit machine at Chester, Pa.

There certainly never has been a more active period of expansion in this industry.

## BRITISH COLUMBIA ONE OF "HOT" REGIONS



In the field of pulp and paper expansion, one of the "hottest" regions in the world today is British Columbia.

Only certain areas of the South and the Washington State-Idaho area, where five new machines have been started up or soon will be, or have been ordered, can come near to matching British Columbia's present pace, with new activity now under way representing an investment of more than \$80,000,000.

During the five years since the close of World War II, construction and machinery installations and general improvements in British Columbia's pulp and paper industry have called for an expenditure of more than \$135,000,000, according to well authenticated estimates.

All existing mills have carried out ex-

tantive modernization projects, notably Powell River Co., which has spent \$15,000,000 during the five-year period and has earmarked another \$12,000,000 for an extension of its development program.

But the largest capital expenditures have been in connection with new mills for British Columbia. First of the post-

war mills to go into production was that of Bloedel, Stewart & Welch, at Port Alberni, followed this year by H. R. MacMillan Export Co. pulp division at Harmae. The big new dissolving pulp mill of Columbia Cellulose Co. (Celanese Corp. of America) is expected to be in production at Watson Island during the first quarter of 1951. Construction of the mill for Elk Falls Co.'s newsprint mill, near Duncan Bay, has already been initiated.

These four undertakings alone represent an expenditure of more than \$100,000,000.

In addition, companies such as Pacific Mills, B. C. Pulp & Paper Co., Westminster Paper Co., Sidney Roofing & Paper Co., and Sorg Pulp Co. have spent substantial sums on post-war modernization, aggregating some \$10,000,000.

With an abundance of pulpwood timber still available in several sections and more hydro-electric power undeveloped than anywhere else in Canada, British Columbia's expansion pace in the field of pulp and paper is not likely to slacken in the foreseeable future.

### Huston of KVP Talks to Michigan Superintendents

Robert A. Huston, manager of public and industrial relations, Kalamazoo Vegetable Parchment Co., Parchment, Mich., talked to about 75 men at the Oct. 19 meeting of the Michigan Division of the Superintendents' Association.

The first step in dissipating the distrust of labor and management, related Mr. Huston, must be taken by management.

"If we insist upon taking a legalistic approach in negotiating a labor agreement or processing a grievance," he said, "we cannot expect to have a harmonious relationship. If we are to make the best of the mandate to bargain collectively, we must try to gear our thinking to people, not laws; social humanities, not retaliatory measures."

## JOINT SAFETY CONFERENCES

The first labor-management joint safety conference ever held in British Columbia by any industry was staged by the pulp and paper mills of that province in October. A month later, the 5th annual similar conference—one of a series in the three Pacific Coast states—was held in Seattle.

The Pacific Coast Association of Pulp & Paper Manufacturers and the AFL unions (who initiated the idea) have been holding conferences in Washington, Oregon and California each year since 1946. It has paid off by reducing accident frequency in mills of the three states from 30.4 lost time accidents per million man hours in 1946 to only 8.6 for 1950 to date.

### Wage Increases Announced On Coast; In Wisconsin

Wage increases were reported by many mills or groups of mills during the past month.

On the Pacific Coast, a voluntary 4% boost in all wages in some 40 mills in three states became effective Nov. 1 for 16,000 AFL union members and employees. Most of these mills participated in the joint coastwide management-AFL union wage conference in Portland, Ore., in October, and a few non-member mills followed suit. The increase was in addition to the 7 cent an hour boost last May and that contract, running till June, 1951, was not reopened.

The base rate for men employees has now risen to \$1.53 an hour; for women to \$1.25. An industry spokesman said average male employees now earn \$1.95 an hour and \$4,000 a year.

Voluntary 5½% or 5% increases were granted to employees of Wisconsin mills. Similar increases were reported in New England.

About 5,000 employees of Consolidated Water Power & Paper Co.'s four Wisconsin mills received a 5½% increase, and Stanton W. Mead, vice president in charge of manufacturing, said it brought the men's base to \$1.34. This was their second raise in 1950—a 5% increase having been made last May.

Combined Locks Paper gave an 8-cent-

an-hour boost to 440 workers, who got a 5% increase in August.

A voluntary 5½% boost for employees in the four rag bond paper mills—Fox River Paper, Appleton; Neenah Paper, Neenah; Gilbert Paper, Menasha, and Whiting-Plover, Stevens Point, Wis., followed a 5-cent hike last spring. Ditto: Appleton Coated Paper.

Nekoosa-Edwards Paper Co. announced a "voluntary" 5% increase. New agreements with Rhinelander Paper Co., Kimberly-Clark Corp., Lake States Yeast Corp., Rhinelander, and Minnesota and Ontario Paper Co., International Falls, Minn., were announced previously.

### Brown Company

According to Philip Smyth, president of Local 75 of AFL, the recent general wage increase of five cents an hour to employees of Brown Co., Berlin, N. H., announced jointly by Mr. Smyth and Lawrence F. Whittemore, president of the Brown Co., is the first voluntary raise of closed contract type in the industry in New England since the start of Korean hostilities. Although the wage contract did not expire until June of next year, the new arrangement is result of conferences of labor and management on subject of production improvement. Acting for the company were E. E. Morris, works manager; A. E. Hanson, director of company relations; Lorin Given, industrial relations supervisor; and J. W. Jordan, counsel.

### Sandwell Engineering Firm Opens Seattle Office

Sandwell & Co., consulting engineers specializing in the pulp and paper field, with head office in Vancouver, B. C., has established a U. S. subsidiary in Seattle, under the name of Sandwell & Co., Inc., at 310 Republic Building, which will be managed by A. E. Frankfurter as resident engineer. Mr. Frankfurter is a graduate of the University of Washington and served with Crown-Zellerbach Corp. before joining the Sandwell organization.

Head of the company, P. R. "Dick" Sandwell, spent most of October in Sweden.

"BARBER SHOP" HARMONY AT ANNUAL WINE DINO of the Paper Makers & Associates of Southern California, at the Rainbow Angling Club, Azusa, Calif., Oct. 14, attended by 75, largest turnout to date. Fresh-caught trout was dinner feature. Singing quartette, left to right: CLAUDE SHARP, PSAC Chairman and Manager, Los Angeles Paper Box Co.; WILLIAM MONETTE, Wine Dino Chairman, Dicelis Corp.; H. A. (GOB) DES MARIAS, Pacific Coast Manager, General Dye Stuffs Corp.; and GLENN A. PHILLIPS, Pioneer-Flintkote Co., Pulp Supervisor.



### Fowler Answers Protest On Newsprint Price Boost

In a letter to Charles O. Nichols, president of the National Retail Dry Goods Association, New York, President R. M. Fowler, of the Newsprint Association of Canada, presents some of the background for the recent price increases ordered by Canadian newsprint manufacturers.

Mr. Nichols had written to Mr. Fowler pointing to the dangers of inflation and suggesting higher costs of newsprint might lead to higher advertising rates and thus divert business from the newspapers.

"The costs of making newsprint have increased rapidly in the last two years, while Canadian newsprint prices have remained unchanged," points out Mr. Fowler. "Wages have increased each year, both in the U. S. and Canada, and in recent weeks another 5% wage increase has occurred for some companies, and other negotiations are in process. Pulpwood now being cut is likely to cost \$3 to \$4 a cord more than last year, and it takes over a cord of wood to make a ton of newsprint. Many items coming from the U. S.—sulfur, transportation, machinery and coal, to mention only a few—have increased in price. And I have yet to hear of any Canadian manufacturers presuming to tell the American railroads, coal miners or machinery makers what profits they ought to make."

### Sunday Edition, Two-Bits!

The New York Times in November was quick to ease itself from some of the added cost of the recent rise of \$6 to \$10 per ton in newsprint—announcing that its Sunday edition outside a 50-mile radius of New York City will cost 25 cents. Price of week-day editions stays at five cents, Sunday 15 cents. The cost of the out-of-town Sunday edition brings a newsprint publication to a customer cost equal to, or more, than what writers call "the slicks"—the weekly and monthly magazines printed on book paper.

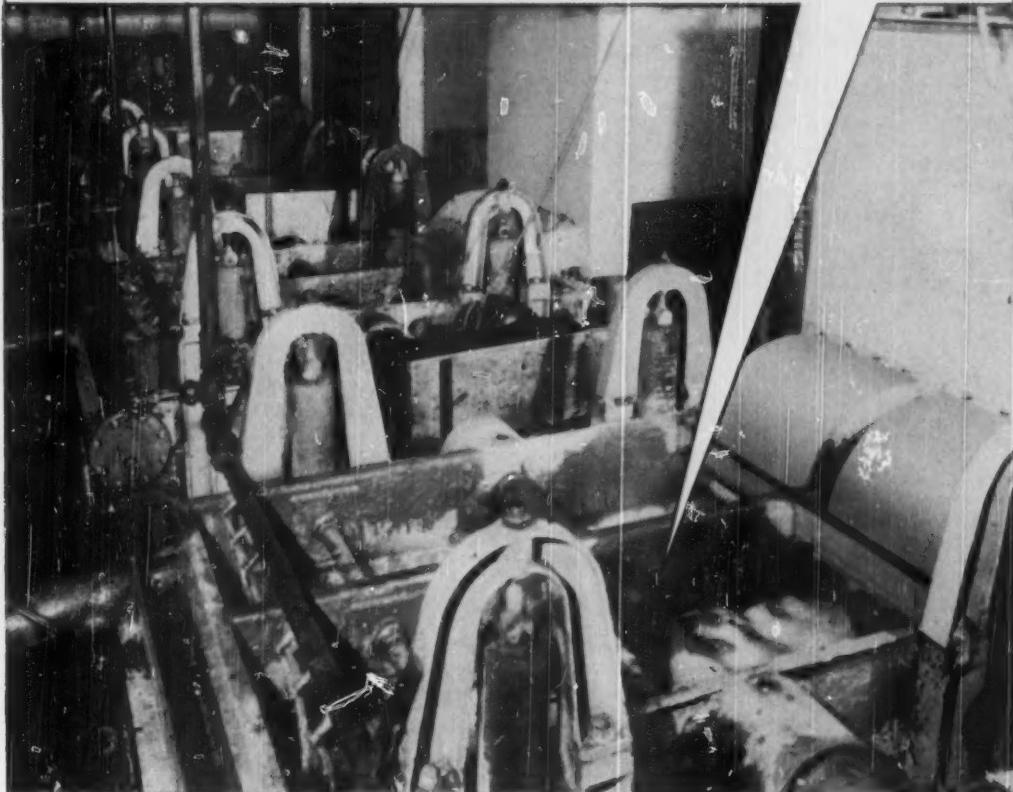
### Alice Dow Joins Lowe



Alice Dow (in picture), widely known ex-secretary of the Pennsylvania-New Jersey-Delaware division of the Superintendents' organization, had a happy month in October. After a two-year sojourn in Florida she returned north to attend the Fall meeting of the division in Philadelphia and was astonished to receive a beautiful wrist watch and a scroll of appreciation for her services to this group. And, to cap the climax, she was offered and accepted the position of secretary to Jack Lowe, president of the Lowe Paper Machinery Co., Holyoke, Mass.

DR. LINCOLN R. THEISMEYER, president of Pulp & Paper Institute of Canada, Montreal, Que., visited Pacific Coast states mills and B. C. mills in early November.

**HERE'S WHERE YOU START** *Cleaning Up*



Bird Jonsson Screens get you off on the right foot — right at the start!

Jonsson Screens take out the dirt, knots, shives and what not *before* they get banged around and broken up into the fine specks that are so hard to remove later on.

Jonsson Screens do such a good job, handle such big tonnage, with such insignificant loss of good fibre in the tailings, that hundreds upon hundreds of them have been put to work.

Why not find out what they can do for you?

**BIRD MACHINE COMPANY • South Walpole, Mass.**

**The BIRD JONSSON SCREEN**

# SEMICHEM "REVOLT"

## Process in Michigan Ends Use of Straw -- Also, Aspen Supplants Costlier Jack Pine

One of the most revolutionary changes that has taken place in recent years in this industry involves the American Box Board Company of Grand Rapids, Mich., and its subsidiaries, particularly the pulp and paper plant it purchased on July 1, 1947 at Filer City, on the outskirts of Manistee, Mich., and renamed American Pulp & Paper Division of the American Box Board Co.



WALTER S. GOODSPED (left) is President and G. B. BONFIELD (right) is Vice Pres. in charge of Operations, American Box Board Co., Grand Rapids, Mich.



BRUCE W. MARTIN (left), Manufacturing Manager, American Box Board Co., Grand Rapids, Mich., who was formerly with Union Bag and Gaylord.  
WILLIAM L. SCHNORBACH (right), Mill Manager at its American Pulp & Paper Division, Filer City, Mich., where his father and Max Oberdorfer built the first mill—now supplanted by a semichemical mill.



### THIS IS ANOTHER ARTICLE IN SERIES ON NEW PULPS Processes in Other Mills to be Told in Later Issues

This is another in a series of articles especially prepared for PULP & PAPER on progress in various newly developed commercial scale semichemical pulping plants.

Unusually high yield of fiber from wood is achieved by these processes—up to 80% or 85% in some cases; all kinds of wood species can be used and former "weed" trees now have new important uses; effluent b. o. d. is lessened; economy is achieved in chemical usage, and improved products have resulted.

There are both semichemical kraft and sulfite processes. Products are still chiefly corrugating board, but coated papers, bottle cap, playing card, wrapping, etc., are made by the process.

In PULP & PAPER's April 1950 issue we described a process at Sturgeon Falls, Ont., mill of Abitibi Power & Paper Co. for corrugating board. In the Aug. 1950 issue we reviewed a quarter century of semichemical pulping and described particularly the process for book paper at Consolidated Water Power & Paper Co., Wisconsin Rapids.

In the Nov. issue we featured a new semichemical board system at Gaylord Container Corp., in Bogalusa, La., with exclusive data on equipment.

On this page, is an exclusive article on the process at American Box Board's plant at Filer City, Mich., which has wrought great changes in that company's operations.

Next month—another exclusive article—bringing out many hitherto unreported features of the semichemical process for board at Green Bay Paper & Pulp Co., Green Bay, Wis.

### Company History and Expansion

As proof of how things are looking up for American Box Board, a new \$1,250,000 corrugated and fiber box plant is being built in Grand Rapids, going into production in May, 1951, by schedule, and an old 63-inch corrugator there is being sold and a new Langston 85-inch corrugator along with other new equipment is coming in.

Modern equipment will permit such operations as making in one piece the large boxes that are required by the furniture industry.

The expansion plans are the fourth step in growth of the firm since 1942, when the plant was acquired for the Folding Paper Box Division, which serves customers in more than 35 states. Second step was construction of the Chicago plant and third was acquisition in 1947 of the mill in Filer City.

American Box Board has a record of excellent planning and management behind it, and so with that background, considerable confidence in the new innovations seem to be indicated.

The company was founded in 1903 as a small paper box factory making ladies' hat boxes. It has grown steadily from that tiny specialty plant to a company composed of over 3000 stockholders and 1300 employees, operating two cylinder paper machines, a corrugated and solid fiber box factory and folding paper box factory in Grand Rapids, Mich.; the modern corrugated box factory in Chicago and the mill at Filer City.

In its 47-year history it has lost money in only one year. Its sales boomed over \$14,000,000 last year and that is about six times what they were a quarter of a century ago.

### Principal Executives

Walter S. Goodspeed, with the company since 1932, is president, and G. B. Bonfield, who joined in 1921, is vice-president in charge of operations of American Box Board. Mr. Goodspeed started as secretary and was former general manager. Mr. Bonfield was former manufacturing manager, which title he assumed in 1945. J. S. Burns, vice-president for sales, was former Chicago plant manager.

When the company launched the program calling for these radical changes in its operations, it brought into the firm Bruce W. Martin as manufacturing manager, with headquarters in Grand Rapids, but he has made many trips to Filer City. Mr. Martin, who has a master's degree in



AMERICAN BOX BOARD CO. Officers in Grand Rapids also include R. K. STOLTZ, Treasurer; F. W. OLDEBERG, Gen. Sales Mgr., and C. F. RABER, Personnel Director.



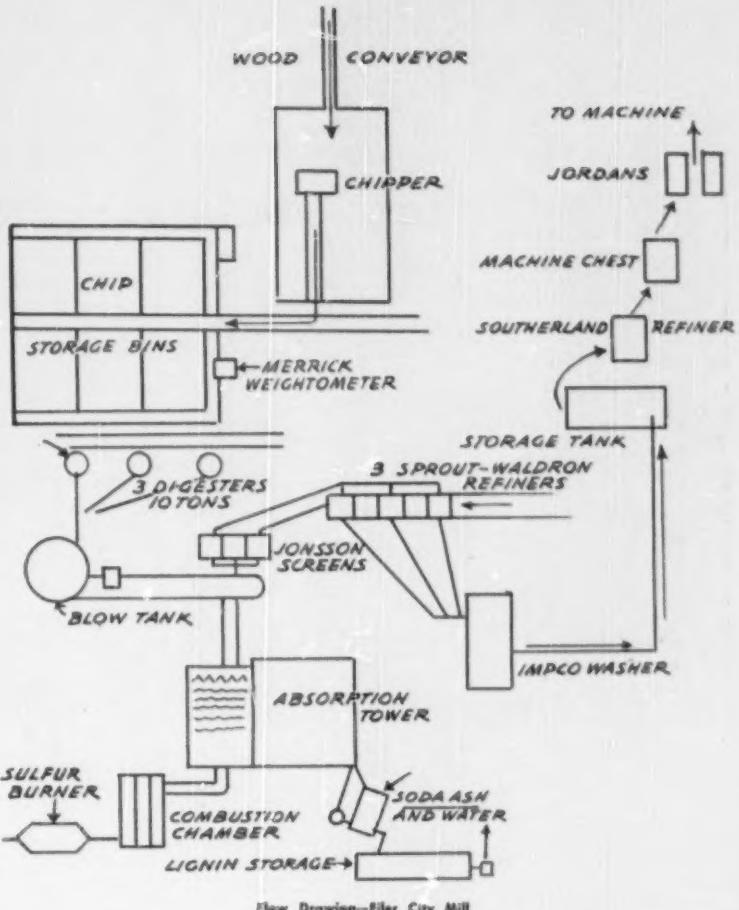
AMERICAN BOX BOARD OFFICIALS (left to right): RICHARD P. AUMENT, Technical Director for the entire company, with headquarters in Grand Rapids; JACK MORRISON, Gen. Sup't. for 14 years and now Sales Mgr. of Mill Products, who is at Filer City; DONALD L. VOIGTS, Tech. Director at Filer City Mill.

chemical engineering from Louisiana State, came north from Savannah, where he was general superintendent at Union Bag & Paper Corp. He started in the industry at Bogalusa, La., as assistant to Wilford Gillespie, the technical director of Gaylord Container.

Richard P. Aument, technical director of American Box Board, who has been with the Grand Rapids company for twenty-four years, graduating from Colgate University in 1923, is another who has spent many days at Filer City, making the 120-mile trip many times.

In charge at Filer City is Mill Manager William L. Schnorbach, son of the late P. P. Schnorbach, who with Max Oberdorfer, now president of St. Helens Pulp & Paper in Oregon, organized, built and directed affairs of the original Filer Fibre Co., back in 1915, which is now the new semi-chemical plant. William Schnorbach, a Michigan graduate in chemical engineering in 1937, has been with the mill since then, except for four years as an Army Air Force pilot, and his father and his brother, Phil, who is now in the coal business in Manistee, were presidents and managers successively until after the mill was sold to Continental Can in 1946. William stayed on under the three changes of ownership. He is an enthusiastic flyer.

Many others have had an important part in the development of the new process here but all of them are desirous of giving credit to the Institute of Paper Chemistry in Appleton, Wis., whose Pulp and Paper Division staff worked out the process in laboratory tests which has been successfully operating here this past year. Also, to the U. S. Forest Products Laboratory, Madison, Wis., for other trials and laboratory testing which helped guide commercial operation.



Flow Drawing—Filer City Mill

#### The Mill and its Products

The mill is on Manistee Lake, four miles inland from Lake Michigan, in which it empties. It is 300 miles north of Chicago and, as we said, 120 from Grand Rapids. It employs some 300, organized by the United Mine Workers District No. 50, "catch-all" union. The mill uses coal for fuel, shipped in by water.

Filer City, a town of 600, is on the outskirts of Manistee, which has a population of about 10,000. Here is the largest salt plant in the world. Morton Salt Co., making salt from underground brine. There is a smaller salt plant, too. And two bromine plants, using brine raw material, and a magnesium oxide plant, made from a residue by-product of bromine. Manistee Iron Works makes the biggest evaporators in the world here, used for salt evaporation.

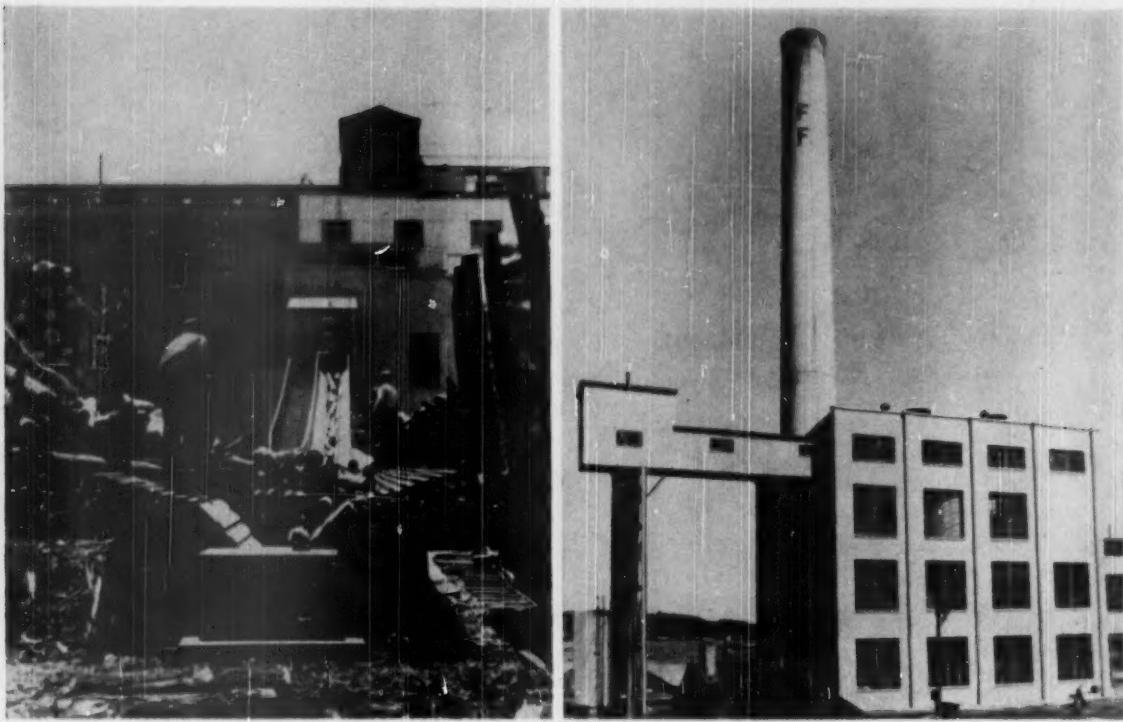
This mill had been making semi-kraft 9 pt. and kraft specialties from jack pine pulp. It made some bleached kraft poplar pulp which it sold, but its products over the years were twisting, envelope, asphalt duplexing, file folder, window shade and other odd lines intended to keep out of

competition with Southern kraft mills. Also, food and other wrapping. This small mill with its narrow machine found competition rough with the wide machine, high producing Southern mills and there weren't enough specialties apparently to keep it going when American Box Board took it over.

#### Wood Comparisons

Most wood used was jack pine and the old jack pine stands in this part of Michigan were depleted. New stands in the National Forests, which cover considerable area around Manistee, were immature. Going far to the North for jack pine and paying \$28 a cord, including \$6.50 freight, was a serious handicap for this mill.

With these Northern woods, a yield of one ton of pulp from 2.33 cords was considered good. Now, with aspen, the yield of a ton of pulp from 1½ cords is the average. It means saving almost half the wood formerly used in production. Within just a radius of 150 miles of the mill, the normal growth of aspen is calculated at 400,000 cords per year. The semi-chemical mill uses at the most 80,000 cords per



VIEW OF NEW WOOD ROOM AND NEW POWER PLANT of American Pulp & Paper Division of American Box Board Co., Filer City, Mich. Left: New all-steel wood conveyor replacing jackladder and much hand labor, built by Wisconsin Bridge & Iron Co., of Milwaukee, Wis. New process permits use of aspen which is prolific near the mill. Right: New boiler house and coal handling equipment.

year. Since the changeover, the jack pine inventories have been sold and it is unnecessary to keep much aspen in storage. Here is another saving in storage costs.

#### A Flow Description

In making the changeover to semi-chemical, the American Paper & Pulp Co. mill staff has made ingenious use of much of the existing kraft equipment, using it differently or modifying it in various ways. Much new equipment has been required, particularly A. O. Smith digesters, Bauer pulpers, Sprout-Waldron and Sutherland refining machines, Impco washers, Bird Jonsson screens, new power equipment and motors. The Beloit machine has been extensively rebuilt. An entire new wood room, more efficient and effecting a considerable labor saving, is an important new unit, as is the new power plant.

The changeover has resulted in the shutting down of the complete kraft system recovery plant; the causticizing plant, old rotary digesters, the bleach plant, the old screen system, jordans, and also, of course, the old wood plant.

*Here follows a flow description of the new operation:*

An all-steel wood conveyor, which replaces a jackladder and much hand labor, and an entire new wood room were engineered by Roderick O'Donoghue, of New York. Wisconsin Bridge & Iron Co., of Milwaukee, built the conveyor. All wood comes in by truck, cut into eight-foot

lengths. It goes through a new Carthage ten-knife chipper with a 19-inch spout, driven by a General Electric 400 h.p. Type M (slip ring) motor. The drive from motor to chipper is a modern short center flat belt drive supplied and designed by J. E. Rhoads & Sons for Roderick O'Donoghue. The motor is mounted on a pivoted Rockwood Mfg. Co. (Indianapolis) base, which maintains correct belt tension for the fluctuating loads. A 36-in. 4-ply Tannate leather belt is used.

#### Pulp Mill

There are four steel chip bins, one old and three new, built by Wisconsin Bridge & Iron, and two have vertical sides and two slanted sides. They are fifty feet deep and will hold a supply of 250 cords in chips.

A. O. Smith Corp. built three new vertical type firebox steel digesters of 10-ton capacity each (2700 cu. ft. each) which replace the four old tumbling digesters of three tons each capacity on kraft. The four chip bins are alongside the digesters. Chips are conveyed from the chipper by belt conveyor to large bucket elevators rising above the chip bins and discharging on other belt conveyors which empty into the different bins. Chips are removed from the bottom of the bins by gravity flow onto short belt conveyors so arranged that they form a gate for each bin, holding back the main supply, just removing what is desired. These conveyors in turn discharge on one large conveyor,

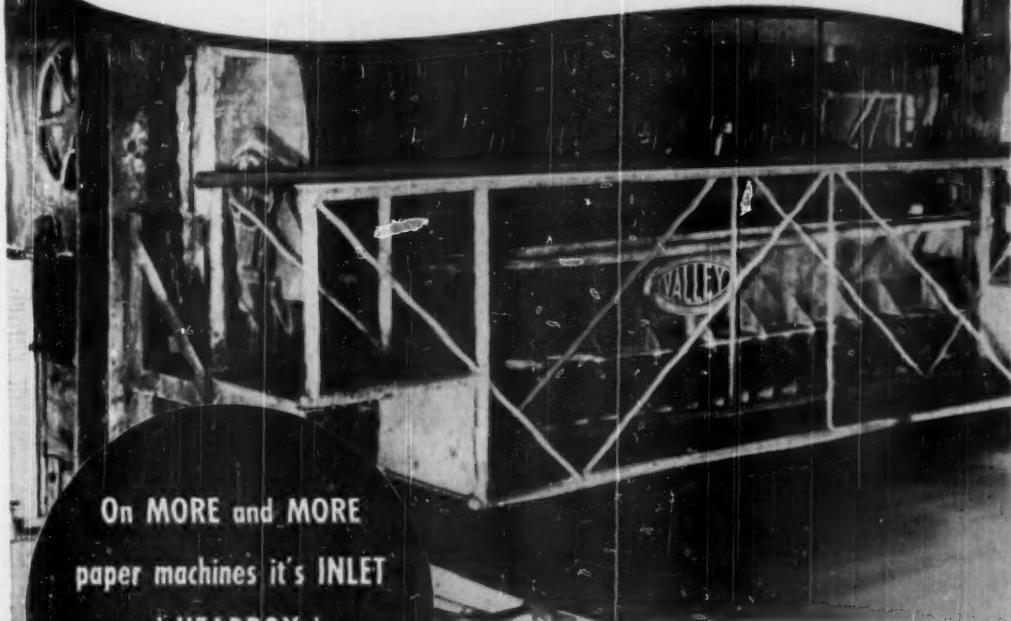
feeding a second elevator which raises the chips to digester loading level. The elevators discharge on a belt conveyor which passes over a Fairbanks-Morse conveyor scale. From the conveyor scale, which automatically weighs chips, the chips pass into the digesters over another belt conveyor which is a shuttle conveyor moving from digester to digester.

An indirect cooking system is employed with Fibre Making Processes pump, strainer and heater supplied. Cooking is fully automatic, with Foxboro instrumentation.

An unconventional departure from normal semi-chemical processes is the procedure used in the pulp mill in that semi-chemical cook results in the original chips, after cooking, being blown from a stationary digester to a blow tank. Digesters are blown at full pressure through Yarway sleeve type stainless steel valves. The dilution necessary in the blow tank is added just ahead of blowing, and chips in the tower are kept in continuous agitation by a Shartle Bros. propeller type agitator in the cone. Chips are removed through a large suction line and pumped by means of an Allis-Chalmers large passage pump to the semi-chemical refining plant where they are discharged into a headbox feeding Jonsson screens. The Jonsson screens are operated in the reverse to the normal method of operation in that the liquor is drained through the screen and chips discharged over the end

# On American Box Board's \* Newly Rebuilt Fourdrinier-- "it's Inlet and Headbox by Valley"

\* American Pulp and Paper Division



On MORE and MORE  
paper machines it's INLET  
and HEADBOX by

**VALLEY**

**VALLEY IRON WORKS CO.**  
**Appleton, Wisconsin**

FORMATION

CALIPER

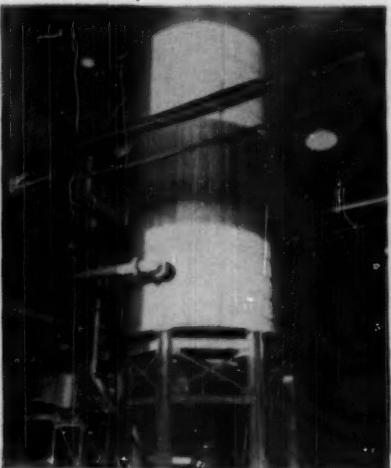
LEVEL SHEET

INCREASED SPEED

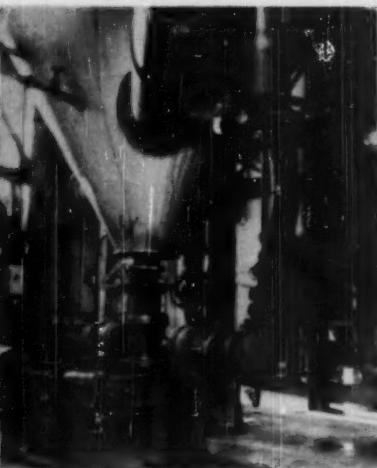
HIGHER TEST



**VIEWS OF NEW EQUIPMENT AT FILER CITY, MICH., MILL:** NEW CARTHAGE chipper—ten-knife, 84 inch type. This shows 19-in. feed spout. It is driven by GE 450 h.p. motor. Chipper was set off center on a base built by Rockwood Engineering Co. of Indianapolis. This positioning is unusual for this size chipper. When load comes, motor rises, maintaining constant tension.



**ONE OF THREE A. O. SMITH CORP. vertical type Grebox steel digesters for neutral sodium process at Filer City mill. They are 10-ton capacity each. Have Fibre Making Processes circulation equipment and Turway blow valves of stainless steel which take full pressure blow.**



**CONE OF BLOW TOWER** in A. O. Smith digester set-up at Filer City, Mich. Shartle Bros. agitator used. Unconventional departure from normal semichemical process is that here the chips, after cooking, are blown from stationary digesters to blow tower built by Chicago Bridge.

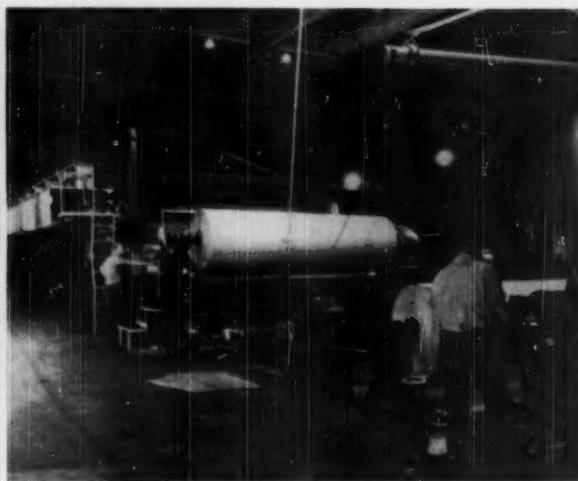
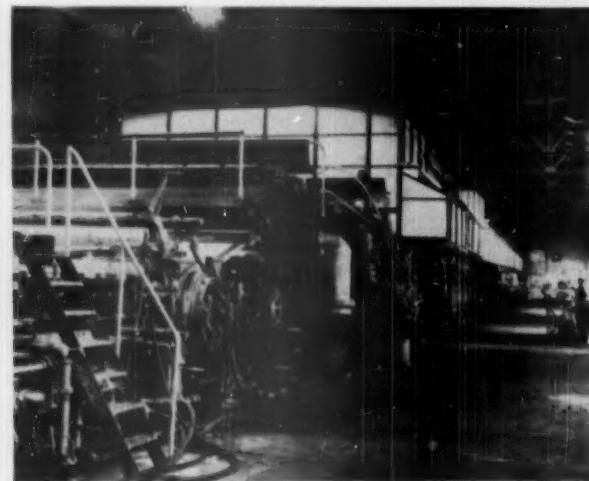
which would be normally the rejects if used as knotters. The liquor is further filtered to remove fiber and small fiber bundles which are then returned to the refiners. Two rows of Eriez Jumbo permanent magnets are installed in each screen to catch tramp iron. The accepted chips are passed on the two-pass refining system using Bauers as pre-refiners and Sprout-Waldrons as final refiners.

The Filer City mill had considerable trouble blowing the digester with the new high yield, short cook, and finally worked out its new system by trial and error. The system is a departure from the standard semi-chemical process wherein Globe digesters are used, liquor being blown out

and the chips discharged by gravity into leachcasters. The Filer City staff feels it has improved on this process because it retains the heat in the process and cuts maintenance on conveyors.

The blow tank is 24 feet in diameter and 62 feet high, built by Chicago Bridge & Iron Company. All through the new semi-chemical plant, it is noted that piping and fitting replacements, as they were needed, were made with stainless steel. In some places they have gone to No. 316 or No. 347 stainless steel. It has been a process of gradual replacement, however, particularly where there is concentration of liquor.

**PAPER MACHINE AT AMERICAN PULP & PAPER DIVISION** of American Box Board Co., at Filer City, Mich., was built by Beloit Iron Works and rebuilt this year. At left, wet end, showing part of press section and beginning of dryers. Two plain presses were taken out and supplanted by Beloit air loaded suction press. At right, dry end, showing stack, reel, etc. Eight new high pressure Beloit cast iron dryers were added.

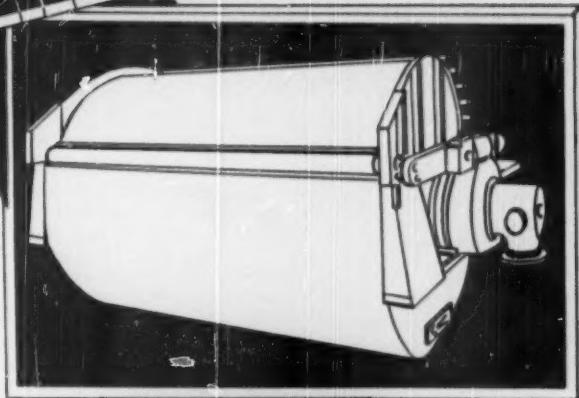
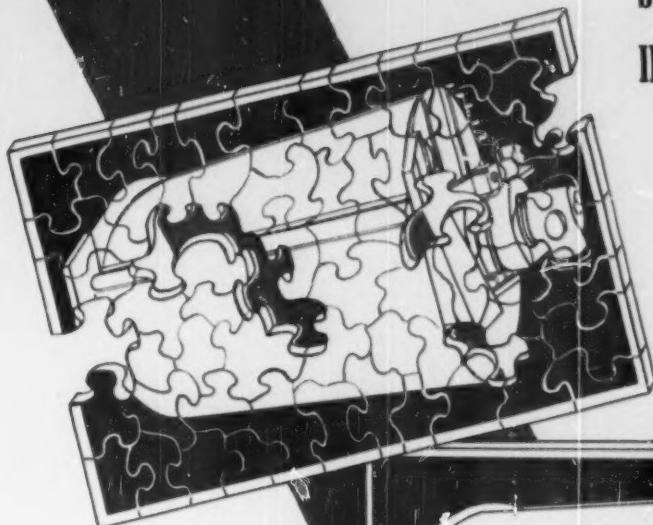


#### Pulp Preparation

The two Jonsson screens and their unusual function have been described. Following these are two Bauer Pulpers of the new double disc type for the preliminary breakdown of chips to coarse fiber. Final breakdown and refining is done in the secondary stage—in three Sprout-Waldron refiners which are driven by Electric Machinery, 0.8 power factor, synchronous motors with E-M magnetic starters. The Sprout-Waldrons, which are single rotating disc units, reduce coarsely pulped material to individual fibers, and develop the pulp strength to a certain degree.

Next the pulp goes over two Improved

*...is a whale of a difference -*  
between  
**INCOMPLETE**  
and  
**COMPLETE !**



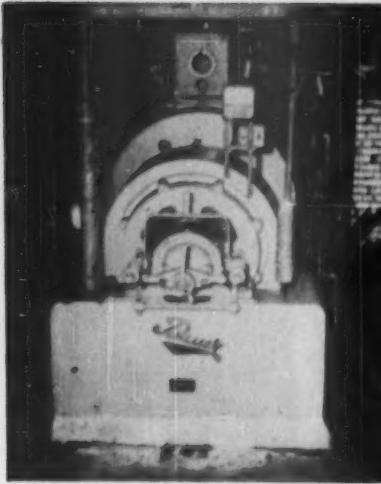
#### Complete Pulp Mill Equipment

Deckers  
Knotters  
Agitators  
Flat Screens  
Waco Filters  
Water Filters  
Foambreakers  
Vibratory Screens  
Thick Stock Pumps  
Centrifugal Screens  
Brown Stock Washers  
Open Cylinder Washers  
Bleached Stock Washers  
Valveless Vacuum Deckers  
Bleach Plant Equipment—All Types  
Wet Machines—Feltless and Felt Types

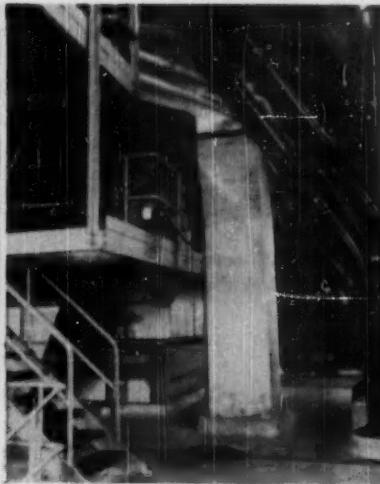
IMPROVED PAPER MACHINERY

NASH

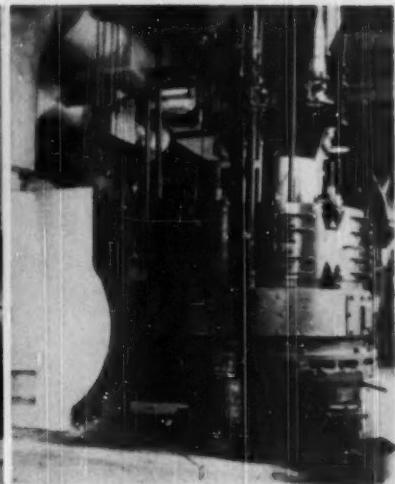
A COMPLETE LINE OF PULP MAKING EQUIPMENT



**VIEWS OF NEW EQUIPMENT AT FILER CITY, MICH., MILL:** A BAUER BROS. PULPER, one of two of new double disc type used at new semichemical pulp plant of American Box Board Co. Bauers are used here as pre-refiners in a two-pass refining system.



**OPERATING FLOOR FOR NEW BABCOCK & WILCOX BOILER** in new power plant at Filer City. View shows coil pipes, inspection door and air ducts. The 125,000 lbs. per hr., 600 lbs. pressure, 750 degres T. T. boiler burns coal, gas or oil.



**BABCOCK & WILCOX PULVERIZER** equipped with Buffalo Forge Co. Fan in the new power plant at Filer City. This is one of two new coal pulverizers.

Paper Machinery Co. 8x10-foot washers and them to storage ahead of the machine room. Ahead of the machine are two Sutherland pulp refiners, 48-inch size, the second one just recently going in. One drive is a General Electric 450 h.p. synchronous motor, and for the other, a 400 h.p. Electric Machinery Mfg. Co. synchronous motor. The Sutherlands accomplish a rolling process on the stock to preserve the fiber length and to get strength development without slowing the stock, according to mill operators. With their installation jordans have been eliminated, although several are maintained as standbys.

#### The Paper Machine

The paper machine, of Beloit Iron Works manufacture, originally built in 1924, and rebuilt in March, 1950, trims 148 inches, having a 162½-inch wire, 80 feet long.

The machine is served by a Valley Iron Works Co. slice and headbox, which combination puts stock on the wire. Changes

**VIEWS OF NEW EQUIPMENT AT FILER CITY, MICH., MILL:** LOADING FLOOR OF A. O. SMITH digestors with fully automatic Foxboro controls on instrument boards, at new semichemical neutral sulfite mill of American Box Board Co.

made during the rebuild were quite extensive in nature in that the only part of the machine not physically moved was the main rail section of the Fourdrinier. Three new wide suction boxes were added in addition to the old boxes, making a total of nine boxes in use. Suction couch drive was raised, giving a straight wire and achieving several inches more level table. A new geared-down Gilbert & Nash wire guide has also been installed.

In the press section two plain presses were taken out supplanted by a new Beloit air loaded suction press. A new Nash vacuum pump supplied by Clark & Vicario furnishes vacuum for the new press. In the dryer section, all dryers were physically moved from their old location. Eight new high pressure Beloit cast iron dryers were added at the dry end of the machine. Six of the old dryers replaced were re-installed at the wet end of the machine and the remaining two were installed in the run as felt dryers.

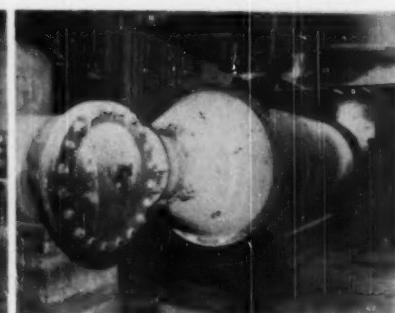
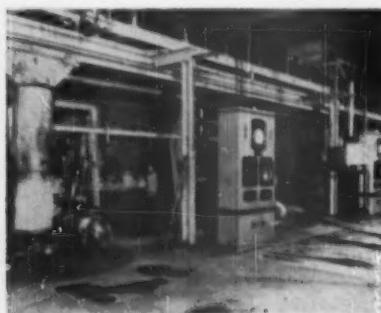
Bird doctors were installed on the first

six top and bottom wet end dryers. A new 600 h.p. Westinghouse turbine, operating at 600 p.s.i. exhausting against a back pressure of 100 lbs. replaced the old low pressure prime mover turbine. Drive changes were made through addition of speed reducers, sheaves, etc., on the in-shaft drive; however, basically, the old rope drive was not altered to any major extent.

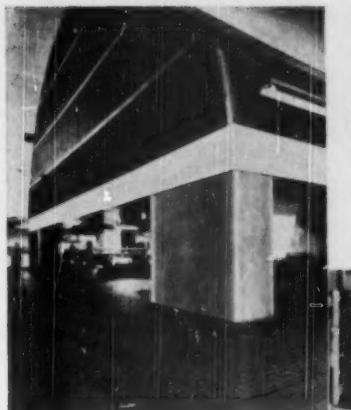
A new Brown Moist-o-Graph is to be installed shortly which will indicate moisture in the sheet leaving the machine but will not control that moisture automatically. A complete new drainage system was furnished by Midwest-Fulton Company to handle steam and condensate through the new sections.

The winder was moved approximately twelve feet, so as to open more space between the reel and winder for work area. Although not installed at the time, a new air controlled brake is being furnished by Beloit Iron Works to replace the old hand friction brake still in use.

**NEW DOUBLE EXTRACTION 5,000 KW GENERAL ELECTRIC TURBOGENERATOR** in new turbine room, built eventually for two 5,000 kw turbines. Operating pressure is 600 psi., 750 T.T., extracting at 150 and 30% for process.



## The Right Prescription For Successful CONVERTING RESULTS...



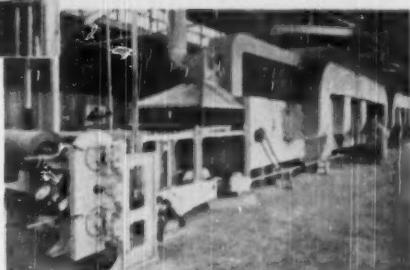
# ROSS Engineered Equipment



Left—Complete system for processing sensitized paper.

Center—Complete system for handling "Microjet" coated paper.

Below—Complete machine line for impregnating material with plastic solution.



### Complete Systems For Economical Streamlined Production!

**I**N THE field of PAPER—making and converting—the most successful producers are users of ROSS Engineered equipment. ROSS installations like those illustrated—for sensitizing, coating and impregnating—are merely examples of the wide range of converting processes for which ROSS designs and builds equipment. Your entire equipment needs for

an efficient machine line—treating, drying, handling—can be planned, built and installed to meet the rigid ROSS specifications for workmanship and standard of performance.

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No other organization has had wider experience with continuous processing systems for paper, plastics, rubber, textiles and synthetics than ROSS ENGINEERING. Consulting us on your plans or problems puts you under no obligation and can save you time and money.



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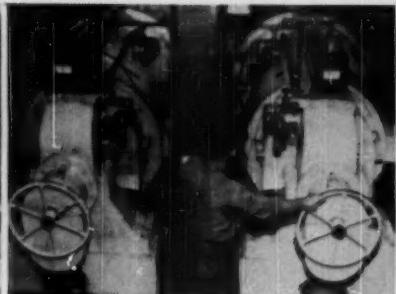
NEW YORK 22, N. Y.

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ROSS ENGINEERING OF CANADA, LIMITED, MONTREAL 32, CANADA • CARRIER-ROSS ENGINEERING COMPANY, LIMITED, LONDON, ENGLAND

December 1950



VIEW OF NEW EQUIPMENT AT FILER CITY, MICH., MILL: A FAIRBANKS-MORSE CONVEYOR SCALE which automatically weighs chips for digesters at top of digester house, where elevators discharge on belt conveyor which passes over this scale.



TWO OF THREE SPROUT-WALDRON REFINERS at Filer City, Mich., for second stage of refining and final breakdown of chips to coarse fiber. These are single rotating disc units. In background are Electric Machinery synchronous motors which drive them.



SUTHERLAND REFINER, one of two such machines at Filer City, Mich., which are used to prepare espen semichemical neutral sulfite pulp for the paper machine. The Sutherlands are 48 in. size, and one is driven by 450 hp GE motor, and one by 400 hp E. M. motor.

With these improvements, machine speed was brought up to 650 feet per minute on .009 corrugated stock of 26 lbs. weight per 1,000 sq. ft. Incidentally, the American Box Board technicians say a superior corrugated board of lighter weight is made from the aspen by this process as compared with the strawboard previously made. They maintain they could not get a strawboard of similar lighter weight with as great strength properties and other qualities which they accord to the new semi-chemical board.

New pumps were furnished the Pulp & Paper Mills by Allis-Chalmers to replace the old pumps, which were of insufficient size to cover the increase in production.

A complete new floor in the finishing room, the addition of a new Clark Equipment Co. fork-lift truck were among improvements after the machine.

#### New Liquor Plant

New liquor making plant was the result of a steel strike. For the new process, American Paper & Pulp was using manufactured sodium sulfite but when the steel mills shut down their coke ovens, this supply was cut off. The sodium sulfite was a by-product of the plastics industry, which depended on benzol, a by-product of the steel mills' coke ovens system. Mr. O'Donoghue helped in the engineering of the new sulfur burner built

PERMUTIT WATER SOFTENING PLANT FILTERS in new power and water plant of American Box Board Co., for new semichemical pulp and paper mill. Filters have 300 gals. per min. capacity and cold lime Zeolite treatment is used.

by Glen Falls (N. Y.) Machine Company. An old recovery unit was converted to a combustion chamber and the absorption was effected by use of an existing tank, packed with Raschig rings of single helix type made by U. S. Stoneware Company of Ohio.

#### New Power Plant

A modern new power plant is one of the showplaces at this mill. Here is installed a new 125,000 lbs. per hour, 800 lbs. pressure, 750 degrees T.T. Babcock & Wilcox boiler. It is outfitted for use of pulverized coal, gas or oil, as desired. B & W made the two pulverizers which are equipped with Buffalo Forge Co. fans.

There is also a new complete Permutit water softening plant of cold lime sodium Zeolite treatment. A Permutit deaerating heater as well as blow down condenser form part of the Auxiliaries for the boiler. Boiler feed pumps were furnished by Worthington and are equipped with General Electric steam turbines and an electrically powered standby pump is also available.

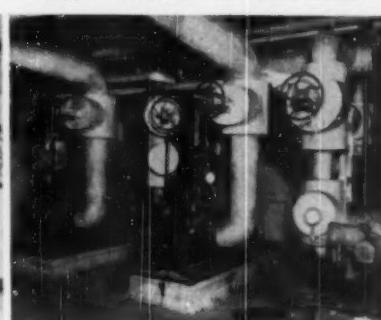
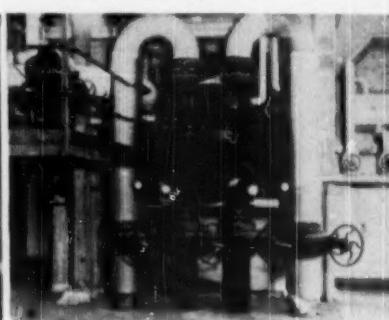
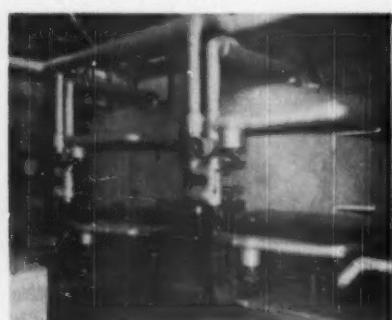
Boiler instruments were furnished by Republic Flow Meter Co., and combustion control by Hagan Corp. General Electric furnished all cubicles and control panels for the entire boiler house. American Blower furnished both forced and induced draft fans and Furnace Economy built the

dry bottom which is also designed for the installation of a full size Dutch oven for burning of bark and wood refuse at some possible later date. Ashes out of the new boiler and old boilers are taken care of by a modern hydraulic ash handling system furnished by United Conveyor Co. The boiler house was designed with a temporary end structure for future addition of a second high-pressure boiler unit.

In the turbine room, built for two 5000 K.W. machines, the company has installed a double extraction 5000 K.W. General Electric turbo-generator; operating pressure of the turbine is 600 p.s.i., 750 T.T., extracting at 150 and 50 pounds for process needs. The condenser was furnished by the C. H. Wheeler Co. and is of the double water box type. The new turbine room basement floor is at ground level with the operating floor of the turbine being at the level of the operating floor of the boiler. Supervisors' offices have been located midway between boiler and turbine. All control and distribution switch gear and transformers have been furnished by General Electric.

A complete new pump house has been installed at the water's edge of Manistee Lake, which houses both mill water supply pumps and power house pumps. An interesting feature in this pump house is the arrangement whereby circulating water for the turbine condenser is returned

WORTHINGTON PUMP supplied boiler feed pumps for Permutit water treatment system in new power plant at Filer City. The Worthington pumps are equipped with General Electric steam turbines.



# COSTS GOING UP ... MATERIALS GETTING SCARCE

One answer is to effect savings in materials . . . lower production costs. A practical answer is the Curlator, for Curlators are accomplishing just those things. In commercial operation Curlators have increased the yield of unbleached sulphite pulp as much as 10%. In addition more than enough sulphur, coal and limestone has been saved to pay all their operating and maintenance costs. Write for more detailed information. There is no obligation.



## SAVE \$\$\$

.....in  
Pulpwood  
Coal  
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CAN MAKE FOR YOU



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I would like to be shown what Curlator can do for me.

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**KEY MEN AT THE AMERICAN PAPER & PULP DIVISION OF AMERICAN BOX BOARD CO.** In Filer City, Mich., Mill (left to right): MILFORD NOSSAMAN, Gen. Sup't.; RICHARD KNECHTGES, Pulp Mill Sup't.; RALPH JACOBS, Yard Sup't.; FELIX J. WILKS, Paper Mill Sup't.



**OTHER KEY OFFICIALS AT FILER CITY MILL,** standing in front of an old power wheel drive, a relic of past years which is standing at office entrance (left to right): TONY FLORSCHINGER, Maintenance Sup't.; GEORGE STEGE, Electrical Engineer; CLAUDE SIMONS, Assistant Plant Engineer.

to a central hot tank which then becomes the mill water supply source. Initial calculations indicate a good balance between power house and mill uses so that very little warm water will be wasted or very little cold water needed for mill processing.

A complete new high voltage distribution system has been installed throughout the plant. 4160 volt service primaries run underground through a power transmission system of five ducts set in concrete. Strategically located manholes provide outlets to the five substation transformers which are connected together in a loop so that in event of failure of one, the balance will pick up and carry the load with only the time lost that is necessary for throwing of switches, disconnecting and reconnecting.

Carroll, Bechtel & Langtry of Chicago were engineers on the entire power plant and distribution system.

Whereas the mill had been purchasing power for the past several years because of no standby power, this will be eliminated. With the new double extraction machine and service, it is expected that steam costs will be materially reduced and the power costs will be substantially reduced.

#### Straw vs. Semi-Chemical Wood Pulp

The theory that straw is on the way out as a paper-making material is discussed, of course, only in areas where it is becoming harder to get. It is far from being on the way out in the Central and Plains

states. But this Michigan company is not the only one that has changed over from straw to the new semi-chemical wood pulp for its corrugating material. Several mills have done so, where straw is not handy at their mill door.

This Michigan company was able to get very little straw from the Southern Michigan farmers and was going farther and farther afield to get it. Another ominous development, in the eyes of its officials, has been the new types of combines for threshing of grain which leave the straw standing in the field. Later this straw is plowed under for compost, and in some areas it appears to be more profitable for the farmer to do this than to try to harvest it for paperboard mills.

It is also demonstrated by the American Box Board technicians that they are getting better box compression and crush tests from their new semi-chemical board than they were from strawboard. They were doing it with even a lighter board.

#### Facts About American Box Board

In an official company prospectus issued last year, it was estimated that American Box Board Co.'s Filer City semi-chemical plant, new power plant, wood room, machine improvement, engineering and other work would entail expenditure of \$6,400,000 for a 3-year period carrying in minor amount into 1951.

Some interesting excerpts from the prospectus:

"Normally about one-half of the company's shipping containers and folding paper boxes are sold to companies in the food and food products industries and the balance to companies in various other industries."

#### Key Personnel at Filer City Mill

Serving under Mill Manager William L. Schnorbach, of the American Pulp & Paper Division, American Box Board Co., Filer City, Mich., are:

**Milford Nossaman**, general superintendent. He came from the Grand Rapids parent plant in January.

**Jack Morrison**, general superintendent for 14 years, now sales manager of mill products. He is a veteran of the industry, having served before his long period at Filer City, with Hummel-Ross in Hopewell, Va., for eleven years and for a short time at the Tomahawk board mill in Wisconsin.

**Donald L. Voigts**, chief chemist at Filer City. He has been with the mill since 1942, coming from the Barrett Company and he graduated from Wayne University.

**Richard Knechtges**, pulp mill superintendent. He came from Northern Paper Mills, Green Bay, Wis., and is a graduate chemical engineer from the University of Wisconsin.

**Felix J. Wilks**, paper mill superintendent. Went to Filer City in 1930 from the LP. Southern Kraft mill at Camden, Ark. He is one of six Wilks brothers, all in paper mills, one being manager at Atenquique, Mexico, and one is assistant superintendent at another semi-chemical plant at Green Bay, Wis.

**Robert L. Harmer**, plant engineer. He came to Filer City two and one-half years ago after 17 years with American Maize Products at Roby, Ind. Graduated in mechanical engineering at the University of Illinois.

**Claude Simons**, assistant plant engineer. He is a mechanical engineer from Michigan State College.

**Tony Florschinger**, maintenance superintendent, at Filer City 15 years, migrated from Mannheim in the German Rhineland.

**George Stege**, electrical engineer. He came from Michigan State College and has been at Filer City six years.

**Ralph Jacobs**, 12-year man at Filer City, is yard superintendent, heads up the new wood room.

ALL STRUCTURAL STEEL INCLUDING ALL STEEL WOOD CONVEYOR AT  
AMERICAN BOX BOARD CO., FILER CITY, MICHIGAN  
FURNISHED BY

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**BRIDGE & IRON COMPANY**

Wisconsin's Oldest and Largest Structural Steel Plant

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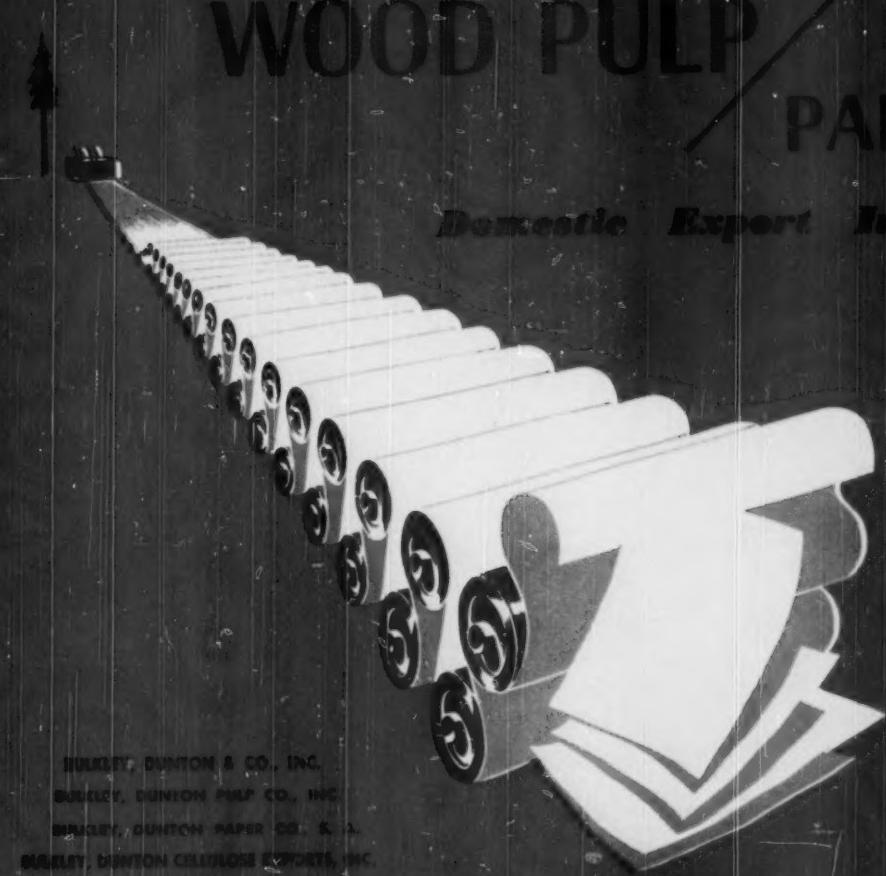
Completely Equipped to Serve All Requirements for Riveted or Welded Steel Structures, Fabricated Parts or Sub-Assemblies

*Efficient and economical  
service in the handling of  
paper, both domestic and foreign.*



# WOOD PULP / PAPER

*Domestic Export Import*



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BURLY-DUNTON PULP CO., INC.  
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# ASHEVILLE MEETING REPORTS

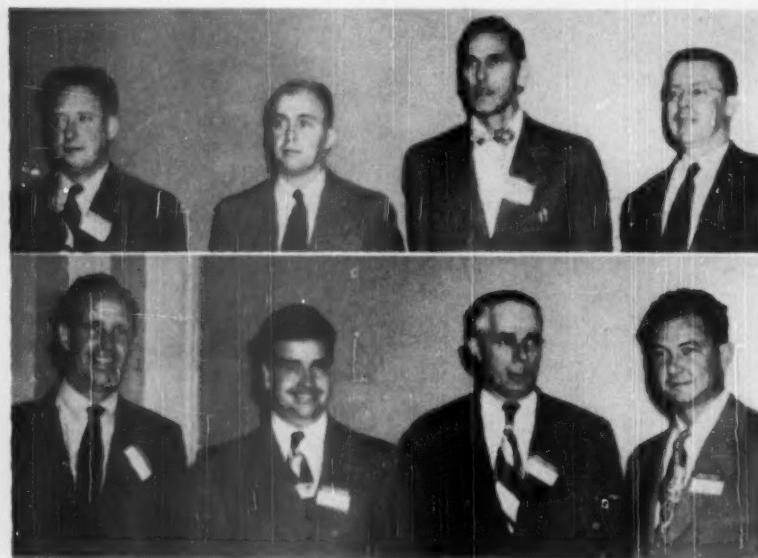
## NEW IDEAS IN SOUTH

### SOUTHERN ELECTIONS—WILL MEET IN FLORIDA IN 1951

Officers selected by the Southern and Southeastern divisions for 1950 were as follows:  
*Southern Division:* Chairman, Otha Winingham, National Container, Jacksonville; 1st vice chairman, John J. Thompson, Southland Paper, Lufkin, Texas; 2nd vice chairman, Tom Coldeway, St. Joe Paper, Port St. Joe, Fla.; 3rd vice chairman, Bruce Brooks, Brown Paper, Monroe, La.; secretary-treasurer, W. C. (Jake) Hayes, National Container, Jacksonville.

*Southeastern Division:* Chairman, Carl Welte, Champion, Canton, N. C.; 1st vice chairman, Cecil B. Curry, National Container, Big Island, Va.; 2nd vice chairman, V. K. Shannon, Mead Corp., Lynchburg, Va.; 3rd vice chairman, Clyde G. Jones, Ecusta Paper, Pisgah Forest, N. C.; secretary-treasurer, T. R. Barnes, Champion, Canton, N. C. Mr. Winingham succeeded Andrew M. Downey, St. Regis, Pensacola, Fla., and Mr. Welte succeeded R. C. (Slim) Bullock, Ecusta Paper, Pisgah Forest, N. C.

The 1951 meeting will be a joint session of the two divisions, to be held in Jacksonville, Fla.



**NEW SOUTHERN AND SOUTHEASTERN DIVISIONS** officers elected at Asheville:  
For Southeast (top row—l to r): Clyde Jones, Ecusta Paper Corp.; Carl Welte, Champion, Canton; R. C. "Slim" Bullock, of Ecusta, retiring Chairman, and Cecil B. Curry, National Container, Big Island. For Southern Div. (lower—l to r): Tom Coldeway, St. Joe Paper; Otha Winingham, National Container, Jacksonville; John J. Thompson, Southland Paper, Lufkin, Tex., and W. C. "Jake" Hayes, National Container, Jacksonville, Fla.

High cost of pulpwood and possible savings by tightening of production angles provided superintendents from pulp and paper mills ranging from Texas to Virginia, with topics for animated discussion at their annual meeting (Oct. 12-14) in Asheville, N. C. The third day was devoted to a visit to Champion Paper & Fibre Co.'s Canton division mill.

#### Enough Crossties for 12 Mills

After J. A. Jackson, of St. Regis, Pensacola, talked about team-play in woods and mill, the superintendents figuratively hitched their chairs forward when Dr. Reavis C. Sproull, assistant director, Southern Research Institute, Birmingham, talked about low cost raw materials from old railroad crossties. Test results were outlined, but from laboratory only, it being intimated that the mills should carry

the work further in simulated commercial investigation.

Tests were: 5 pounds of hogged chips per charge (11.25 liters by volume); chips to liquor ratio 1 to 6; ratio sodium hydroxide to sodium sulfite, 3 to 1; temperature, 170 degrees; pressure, 105 to 115 lbs.; best results of 44% yield from 0.5 hour cook (slow up-grade to cooking temperature); best chemical ratio, 3/4 to 0.5. Up to 50% yield (before screening) gave quality pa-

per pulp; above that, building grade paper.

Under vigorous crossfire it was declared: Dirt would give trouble, impregnated in ties; a trace of creosote odor would be left; paper in hand sheets are slightly darker; bleaching tests have not been carried through; cost of material, half that of today's pulpwood; Defibrator produced insulation type fiber; best mill location, a railroad center; estimated supply, three million tons annually—enough for 12 500-ton mills.

#### References to \$2 Wood Increase

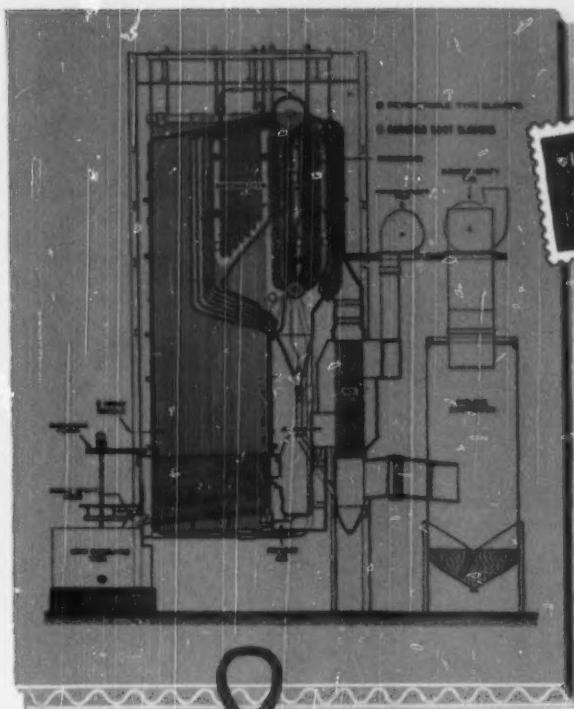
Great strides have been made in improving mill production but only recently has top management been sufficiently interested to spend a few meager dollars on pulpwood harvesting improvement, the superintendents were told by J. E. McCaffrey, president, American Pulpwood Association. Mr. McCaffrey is wood procurement manager for international Paper's big Georgetown, S. C., mill. (See Pulpwood Section for details.) Mr. McCaffrey referred to a recent \$2.00 rise in pulpwood, applying in the Southern industry to 12 million cords annually. He was heard with eloquent silence.

Importance of instrumentation was emphasized by Jesse C. Bradbury, Southland Paper Mills, Lufkin, Texas, in talking on partial acidification of unbleached kraft pulp. Instrumentation for pH control in the operation, which includes a recording unit in the superintendent's office, has kept operators on their toes. Two years' operation has brought satisfactory results: a dependable pH factor. A brightness of 68 to 70 is realized in the newsprint. A saving of between \$4.84 and \$5.31 per ton is realized. From one to four sulfuric acid batches are made up daily.

Closely watched operations to curtail materials waste also yields a measure of stream pollution control, according to Stuart C. Crawford, Franklin, Va., consulting engineer. Waste sources referred to included overloaded equipment, as in the case of washers, tank overflow, and chest dumping.

Discussing various types of equipment, U. J. Westbrook, of St. Regis, Pensacola, said the recent \$2.00 per cord increase in wood should sharpen interest in brown (hot) stock refining. On vacuum washers, he cited their saving in space, closer control, continuous operation, and shortened time from digester to machine. Evaporators should be planned somewhat oversize as having little flexibility and overloading brings expensive results.

(Continued on Page 59)



## FIRST IN CALIFORNIA

Notably "first" on several counts, operations at the great new San Joaquin Division of Fibreboard Products Inc., represent one of the most complete wood utilization programs in the nation. First and only semi-kraft and standard kraft mill in the state, it is said to be the first to use California wood and first to produce 100 per cent 0.009 corrugating material from coniferous pulp by the Asplund system. The standard kraft is bleached for conversion into food cartons and milk containers.

In keeping with its advanced ideas, this East Antioch mill recovers its black liquor with a 225-ton B&W Recovery Unit having steam capacity of 101,000 lb. per hour at 600 psi and 700 F.

This installation is further evidence of B&W's ability to meet the unusual requirements of far-sighted managements and power engineers in the pulping and paper industry. It helps explain, too, why so many leading paper companies keep coming back to B&W for increasingly greater recovery and steam-generating economies in the solution of their present problems and future plans.



P-755

December 1950

57

**now we're  
getting somewhere**

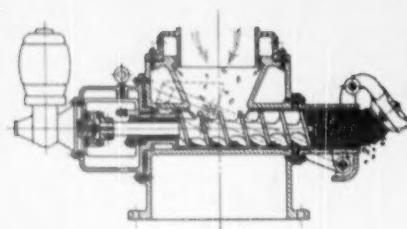
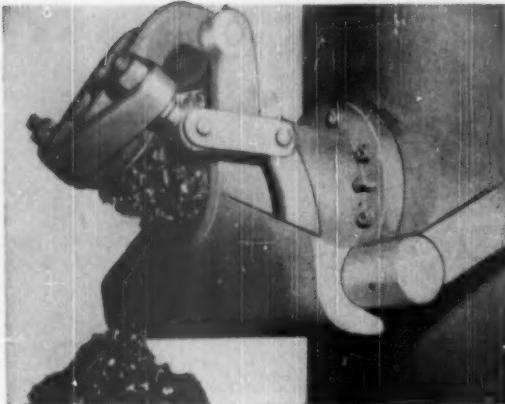
With a dirty paper stock cleaner capable of removing close to 100% of all sand, grit and other matter that's heavier than water.

With a device that will eject the rejects 60% dry and effect important water savings.

With a device that will save every little fiber except the few that may escape because they are bound to ejected clips and staples.

With a device that takes very little floor area, very little power—has only one working part, comes completely assembled and can be put to work in a matter of hours, what has any board mill left to worry about so far as stock cleaning is concerned?

**SHARTLE BROS. MACHINE CO.  
MIDDLETOWN, OHIO**



DILTS MACHINE WORKS, Fulton, New York  
Divisions of THE BLACK-CLAWSON COMPANY, Hamilton, Ohio  
Western Sales Office: Mayer Bldg., Portland, Oregon  
Associate: ALEXANDER FLECK LIMITED, Ottawa, Canada  
Subsidiary: B-C INTERNATIONAL, LTD., 16 Catherine Place Victoria, London S.W. 1, England

**H Y D R A C L O N E**

PATENT NO. 2,546,008





LEE M. BAUER, Mill Manager, Ecusta Paper Corp., Pisgah Forest, N. C., who was Toastmaster at Joint Dinner of Southern and Southeastern Supts. at Asheville Meeting.

(Continued from Page 56)  
Complete instrument control was said to be necessary.

There was some discussion on Mr. Westbrook's reference to adaption of the oxidization process to sulfur recovery from digester relief valves, blow tank exhaust, and evaporator gas passed over a catalyst. Reduction of odors is effected. Recovery of 115 pounds of sulfur per ton of pulp was cited. In discussing by-products he suggested that mills having a small output of turpene from digesters would find an installation for recovery of crude tall oil (for sale to refiners) not too expensive.

#### Employee Relations and Housekeeping

In an inspirational talk, J. O. Wells, of Ecusta Paper, Pisgah Forest, N. C., discussed the trend back to application of sound, already known relationships with employees, using the supervisory level for direct contact. He referred to the war and post-war era during which layer upon layer of "experts" were placed above foremen until they felt reduced to policeman level, from which they were rescued by Congress. Management, he said, must actually make foreman supervision a part of management, giving them a voice in making rules. Men believe only when they participate, he said, adding: "In labor relations, as you would reap, so must you sow."

"Bad housekeeping" was given a sound drubbing by Fred Keys, of North Carolina Pulp Co., who took the superintendents in a rapid, step-by-step review of the production process, pointing out all the individually non-serious but cumulative practices yielding a high waste factor. He sketched how sloppy operation at one point brought inefficient production at the next step in a continuous round until the cycle was completed by a bad digester cooking from poor caustic. When the operator does not fully understand the limits within which his part of the operation functions without waste, supervision is failing, was his summary.

Operation of the microammeter with its photo-electric cell in surface testing printability where surface sizing is involved was vividly described by Vance W. Vandigham, of the Kelco Co., Chicago. Photographs showed how re-wetting of paper brought back felt markings pressed down in the calender.

Experiences in one mill in the gradual replacement of Jordans with Sutherland refiners in stock preparation for liner board were recounted by Otha Winning-



SNAPPED AT ASHEVILLE (top row—l to r): Andrew M. Downey, of St. Regis, Pensacola, who concluded his term as Chairman of Southern Division; William F. Kiehart, of United Engineer & Foundry, Lebelle, Pittsburgh; R. T. Kiddo, Hills-McConna, Chicago; Harry Weston, Secretary of the Supts. Assn., Chicago; Allen Hyer, Bagley & Sewall, Watertown, N. Y. Lower row (l to r): C. L. Durkee, D. J. Murray & Co., Wausau, Wis.; George Witham, Orr Felt, and George Hardaker, Lockport Felt, in their serving caps and outfitts for the social hour; and Joe Schaeffermann, Bagley & Sewall, New York.

ham and W. C. Hayes, of National Container, Jacksonville, who explained the step-by-step process was necessary to maintain production, and was effected to obtain more production with the same power.

Before change-over, the mill had nine Jordans, he said. One was replaced with two Sutherlands to supply a secondary headbox that was installed. Before the change was started, the mill produced 208 tons per day. When all changes were completed, including installation of seven Sutherlands, 400 tons per day were pro-

duced. Originally, from 15 to 20 tons of kraft waste was used, but this is being discontinued. The National Container mill is located on a site closely bounded by other industries and expansion of the power house was not considered feasible.

Jacob V. Edge, of Downingtown Mfg. Co., presented a paper on pulping equipment design.

Results from changeover to brown (hot) stock refining at St. Joe Paper Co., Port St. Joe, Fla., were given by Tom Coldeaway. Following is a description of the installation and results:

## ST. JOE'S HOT BROWN STOCK REFINING

The purpose of installing the brown (hot) stock refining method at St. Joe Paper Co. mill was solely to obtain an increase in yield from pulpwood consumed in the operation, Tom Coldeaway told the superintendents. The change involved modification of both cooking and alkalinity, as well as selection of where to return the rejects. Other modifications called for were in washing, and modifications were worked out on a trial basis, one at a time. One method would be tried for a month; if it appeared to work out, it was a case of "what next?"

The St. Joe mill uses all pine, mostly loblolly. Some of this is "old field," which may have knots. Little of the wood is longleaf.

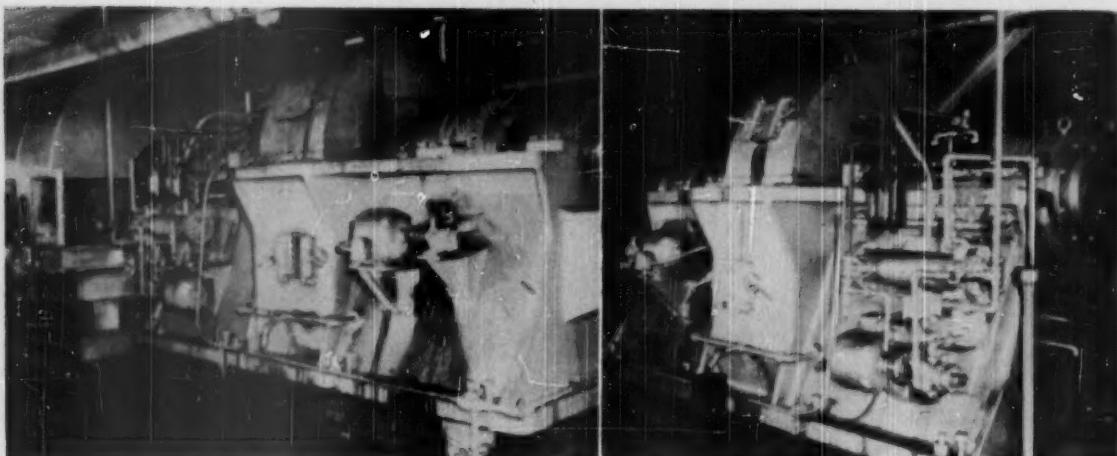
The installation includes four 4300 cu. ft. capacity digesters, with direct cooking. The blow tank is of two digester capacity. The mill is on 100% brown stock refining.

Brown stock goes from the blow tank past two tramp metal magnets and a De-Zurik consistency regulator to a Hermann Claflin refiner. This serves to break up oversized knots. A second Claflin is being installed to provide greater refining of

rough material at this stage. In addition to these two magnets, there are two over the chip belt leading to the bins and one between the blow tank and the brown stock pump. All were furnished by Ding Magnetic Separate Co., Milwaukee. Consistency from the blow tank is 4½%.

After the Claflin operation, the stock goes to an installation of four 48-inch disc Sutherland refiners built by Valley Iron Works, Appleton, Wis. Each refiner is driven by 350 h.p. General Electric synchronous motor.

Mr. Coldeaway said no reduction in power use in stock preparation room has been observed, but this had not been sought. He thought, perhaps, that greater hardness might offset what power saving



HERE ARE TWO OF THE FOUR SUTHERLAND REFINERS, whose use for hot brown stock refining at St. Joe Paper Co., are described in this article. At elevations above washers and also above mezzanine of machine room, lack of head room made it impossible to take picture of all four of the Sutherlands in one exposure.

could be involved. The four Sutherlands constituted a new installation. The Claflin refiner replaced an old unit.

From the refiners, the stock goes directly to two chains of three each 8x10-foot Oliver United rotary washers (filters) equipped with Oliver-Ring valves. From washing, the stock goes to a 50-ton capacity storage chest.

When the washer installation was originally started up about 350 tons per day passed over them and, with a variable quantity of as high as 480 to 500 tons per day, some difficulty has been experienced from overloading. The mill has been told that on brown stock washing the equipment could be guaranteed to 5/10ths ton per sq. ft., which would amount to much less than the current load. Consistency at washer is one percent. On a larger installation the stock would be slowed up, thickness of blanket materially reduced. Currently the sheet is slightly darker.

Stock from storage goes to seven IMPCO rotary screens of which six are primary and one secondary. It then goes to three 4-stage deckers, thence to the washed stock chest. From this chest it goes to an installation of five 48-inch disc Sutherland refiners ahead of the paper machine. These refiners are of different type from those working on brown stock.

Rejects do not run any larger than  $\frac{1}{4}$ -inch. These are returned to the blow tank.

When the mill first started its digesters produced 12.5 tons of pulp per charge. This had been increased to 14.4 tons previous to the change to brown stock refining. This yield came from 1.31 units of wood (168 cu. ft.) per ton of board, using 43,000 lbs. of steam per digester at 125-lbs.

In Sept., 1950, the digesters produced an average of 16.0 tons of pulp per charge, with wood used 1.19 units per ton of board produced, using 36,300 pounds of steam of 125-lbs. pressure per digester load.

Previous to brown stock refining the mill cooked to 34 (Tappi) permanganate hardness. Now the mill cooks at 44 to 46 hardness. The cooking uses 7400 gallons of alkali per digester, or 11,300 gallons total charge, including both white and black liquor. Total cooking time is 2 hours to 2 hours and 5 minutes with digester brought to full pressure in one hour. Mr. Coldeway reported further decrease in cooking time to  $1\frac{1}{4}$  hours. Maximum digester pressure, 98 pounds. Average production 400 tons from 24 digester charges per 24 hours.

Freeness tests on brown stock have run around 700. Chlorine tests were started

recently, with late tests running Nos. 15.2, 15.9 and 16.0.

Evaporator technique has not been reduced to a settled basis yet. Currently solids to evaporator have run about 13 $\frac{1}{2}$ %. They are boiled frequently. Heavy greasing schedule is required for the Sutherlands running on brown stock, he said.

Refining of brown (hot) stock is definitely one of the answers to conservation of natural resources, said Mr. Coldeway.

Initiation of the change-over to brown stock refining at St. Joe was effected in March, 1949, and steady 100% production began March 8, 1950.

## Improvements at Canton Mill

### WORLD'S WIDEST PRINTING SHEET

### Hardwood Use Requires Equipment

Substitution of Appalachian hardwoods for the exhausted supply of blighted chestnut at the Champion Paper and Fibre Co. division mill at Canton, N. C., is resulting in considerable changes in equipment. These changes, along with the continuous program of improvements to keep pace with the industry, were viewed by visiting superintendents who attended the October meeting in Asheville. The superintendents were

special "bug fryer" installations that attract and electrocute night-flying insects have been installed. These consist of an "attractive" blue-white light with an electrically charged screen below, supplied by Detgen Corp., New York.

The devastating effect of blight on chestnut stands in the Appalachians is now widely known in the industry. These stands have been in process of liquidation for the past decade, and now Champion is turning to hardwoods as a source of supply for short fiber pulp. Poplar, gum and oak are included in the fair range of hardwoods utilized.

Production of tannin from chestnut will



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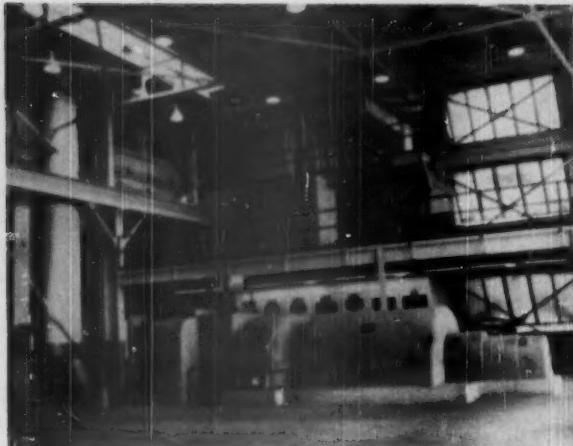
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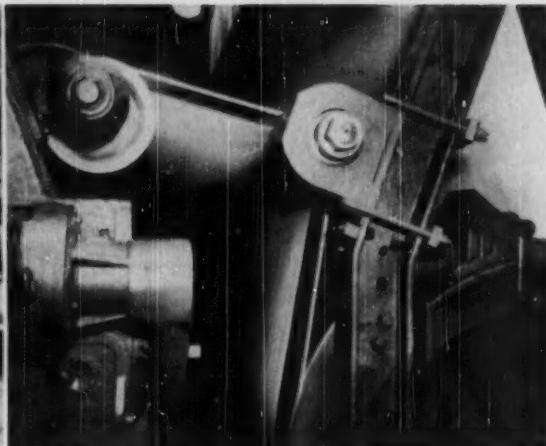
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**NEW GENERAL ELECTRIC TURBO-GENERATOR** installed during past year at Canton, N. C., mill of Champion Paper & Fibre Co. mill, is set in attractive modern power house addition. It produces 7500 kw at 3600 rpm, 13-stage, 700 degrees F. temperature, 400 lbs. steam pressure.



**MT. HOPE MACHINERY CO.**, Taunton, Mass., made this "Free Wheeling Expander" for No. 12 machine at Champion's Canton mill which is said to be making the widest printing paper sheet in the world. This picture by PULP & PAPER is taken from under side, showing Neoprene coated roll. Expander is used to obtain maximum width and eliminate creases, wrinkles, etc.



**H. A. HELDER**, Division Mgr., of the Canton, N. C. Division of Champion Paper & Fibre Co. Photo by PULP & PAPER.

**CHAMPION'S CANTON DIVISION** executives who helped to greet touring Asheville delegates (l to r): **GEORGE M. TROSTEL**, Production Mgr.; **A. M. FAIRBROTHER**, Asst. Production Mgr.; and **M. K. SMITHERS**, Turbogenerator Engineer.

be discontinued during the summer of 1951.

In utilizing the blighted chestnut stock during the past few years, barking was not necessary as it had sluffed off. The substitution of hardwoods, therefore, required the enlargement of barking and chipping facilities. The two 14-foot diameter Fibre Making Process barking drums will have a third likeness for operation about May, 1951. The old chestnut wood

chipper will continue until the replacement program reaches it.

Barking and chipping capacity of Champion's pine mill will be increased by about 30%, a third Fibre Making Process barker also going in here. This operation has two multi-knife D. J. Murray chipper installations. The improvements in the pine mill are also in the interest of better preparation of the wood for a still higher quality standard for pulp.

#### **Making Widest Printing in the World**

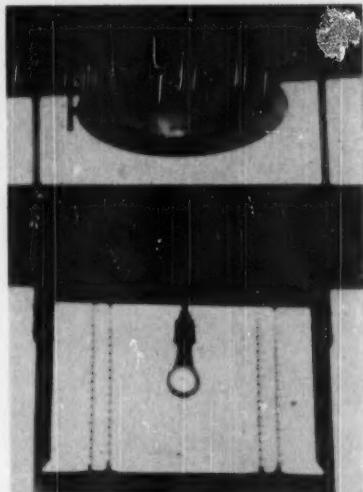
One new installation that attracted the superintendents' attention during their tour of the mill was a Mount Hope Machinery Co., of Taunton, Mass., free-wheeling expander placed on the No. 12 Pusey & Jones Fourdrinier machine just behind the size press. This expander consists of a Neoprene sleeve which revolves on ball bearing spools around a stationary bowed axle. As the paper passes over this it is kept free of creases, wrinkles and distortion. When viewed, this machine was said to be running the widest printing paper sheet in the world. It is a 232-inch machine.

The mill has on hand a Westinghouse mercurec rectifier acquired from World War II surplus for production of chlorine. Its installation is in process, with the expectation that it will be cut into service about the first of the new year. The unit is to produce 65 tons of chlorine daily.

A new 350-ton Combustion Engineering recovery boiler (smelter) is scheduled for completion in 1951.

Installation work on four Cottrell precipitators, furnished by Research Corp., will start toward the end of 1950.

The mill management hopes that by the end of 1951 the installation of a completely modern bleach plant for its hardwood board will have been completed. The unit will bleach from 200 to 225 tons per day, following the chlorination—neutralization—lime bleach system.



**THIS "BUG FRYER"** KEEPS insects out of paper machine room at the Canton mill of Champion Paper & Fibre Co. The light above attracts night flying insects who conveniently get electrocuted on the charged screen which is just outside the building. Equipment furnished by Detjen Corp. of New York.

A size press was added to one of the paper machines during the past year.

The Canton mill enjoys quite friendly relations with the farmers in its area, furnishing them with an ever-ready market for their hardwood pulpwood on a "bring it when you're ready" basis. The company posts its price per cord, allowing \$3.00 per cord extra if the farmer barks the logs. The farmers cull their woodlots, using good forest management, as best fits into their other work. The peeled hardwood is stored up for use when tree bark is tighter, requiring more time with decreased production from the barkers. The mill gets pulpwood checks out every two weeks, just like milk checks.



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## MACHINE TENDER Munchausen Stories

The papermaker who sent us the first story ever used in this column—way back in the September issue of 1949—has come through with another one. And this is really a lollapalooza, and we are delighted to send him a check for \$5 in payment.



Stanley A. Wilkes (shown in picture), whose career has taken him from Vermont to Mexican mills, from Wisconsin to the big Southern Kraft mills; as assistant superintendent, superintendent and manager, as he climbed to the top rungs of the ladder, is the author.

Mr. Wilkes has four brothers in U. S. mills, two of them superintendents. One of them is at the Filer City, Mich., mill, featured in this issue.

Mr. Wilkes insists that this story is substantially true—that it is an actual chapter out of his vivid experiences, some of which carried him into pretty primitive papermaking regions.

Here it is. It's some story, we think, and if there really is a plant where they do this, it ought to be in the movies.

### Stanley Wilkes' Story of a Fabulous Paper Factory

On one of my travels I ran across a paper converter who told me all about his business of converting paper into bags and sheets, also roofing paper. One thing led to another and I was invited to visit his factory, as he called it.

First was the Roofing Paper Department. The machine was a wooden hand mold about 3½ ft. square with a fine mesh wire nailed on the bottom with the whole thing sitting in a larger box, which had the cracks calked with mud. As my curiosity was aroused I stalled around to see a complete performance of the roofing paper manufacture from start to finish. It proceeded as follows:

The mold was set in this waterproof box, which was filled with water carried in pails from a nearby stream, and after it was filled to within a couple of inches from the top, they poured a mixture of pulp derived from scrap boxes, old news and some dried grass chopped up, which

was premixed in a barrel. All this was measured out in pails and poured into the mold. While several workers stirred this with paddles four of them raised the mold out of the box to drain the water out and at the same time form a sheet. Then they set it down on a smooth place and placed a board cover that fitted inside of the mold, then four of them got on top of this cover and jumped up and down until all the water was pressed out.

The next process was to spread it on ladders with round rungs spaced about five inches apart, then another ladder was placed on top of the first one; gently it was pressed down to form the corrugated effect and placed out in the sun to dry. The dry sheets were then smeared with hot crude oil mixed with tar on both sides, then layed out in the sun until dry.

The production was about 100 sheets per day, which the manager hoped to improve by building a clay pipe water line from the stream to the factory.

My next departmental visit was to the sheet cutter room, as we proceeded on. I did not hear the familiar noise of a cutter in action, so I inquired if the cutters were shut down.

"Oh, no," he answered, "we are in full production."

As I did not wish to insult my genial host, I decided on the "wait and see" policy. So into the Cutter Department we went, and after one look I was astonished. There were four crude tables with the boards of the table top spaced about ¼ of an inch apart, and as one girl pulled the sheet of paper from an unwinding stand over this table to a certain marker, the cutter girl would insert a sharpened hacksaw blade in the table top (spaces) and cut the sheet to any length desired. My host then remarked that this department was his best money maker.

About the time we covered the Cutter Department, it was lunch time, so we retired to the converter's home for refreshments and a slight lunch, which consisted of 16 courses. By the time this was all consumed, which lasted three hours, the writer was in no condition to visit the bag mill.

My only regrets are that I failed to take my camera along to record all these manufacturing processes in pictures, which would be more convincing.

### Dobeckmun Buys Ben-Mont

Dobeckmun Co., Cleveland, O., has purchased Ben-Mont Papers, Inc., Bennington, Vt., bringing the former's assets to more than \$9,000,000, according to T. F. Dolan, president. In that total the 43-year-old Ben-Mont property is listed at the purchase price of \$1,846,650 and Mr. Dolan states the Vermont plant, employing 300, will this year deliver \$4,000,000 in packaging papers.

### William H. Chisholm Elected Oxford V. P.



William H. Chisholm (shown in picture), son of Hugh J. Chisholm, president of Oxford Paper Co., 230 Park Ave., New York, has been elected a vice president of the company after a number of years as assistant to the president.

Recently he became a member of the board of directors.

### Curtis Sole Owner of N.Y. and Penn Co.

Curtis Publishing Co. is now the sole stockholder of New York and Pennsylvania Co., New York, through a \$20,000,000 loan negotiated by the company for the purpose of refinancing present loans and reducing the number of outstanding shares of the company. Loan was negotiated through Central Hanover Bank and Trust, Irving Trust, and New York Life. There is no change in the management or operations.

While Curtis continues to be principal customer, it is announced that the percentage sold to other customers will continue to be merchandised as heretofore. A complete story on the Lock Haven, Pa., operations appeared in the July 1950 issue of PULP & PAPER.



EARL E. GRANT (on right), President of The Crystal Tissue Co., Middletown, Ohio, is shown being presented recently with a silver medallion by CHARLES R. HOOK, Chairman of the Board of American Rolling Mills, in appreciation for Mr. Grant's services as President of the Middletown Civic Association for the past three years. Mr. Grant has been closely associated with activities of The Tissue Association, having served as a Director and as its President.

### Crystal Tissue Co. Builds Plant Addition

E. E. Grant, president of The Crystal Tissue Co., Middletown, O., announces work has started on a modern, one-story addition, 115 feet by 120 feet, to provide increased and needed capacity for shipping and storage facilities. The Crystal Waxing Co., Subsidiary, will also use the building for expanded manufacture.

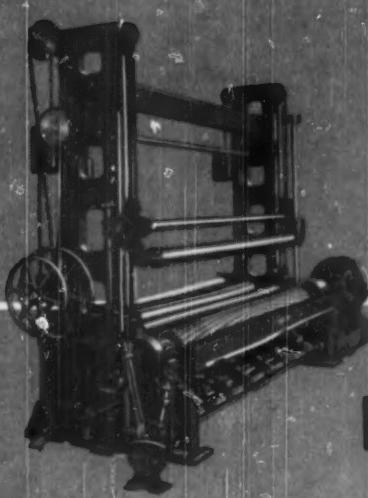


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## ADDITIONS AT FORT WILLIAM MILL

The Thunder Bay area of Western Ontario, embracing Fort William and Port Arthur and the surrounding forest land, already represents one of Canada's most important concentrations of pulp and paper production, but its future is destined to be greater than its present and past.

One of those who believe in this optimistic forecast is Hon. W. Earl Rowe (in picture), president of Great Lakes Paper Co., Ltd., whose pulp and paper mill at Fort William is one of Canada's outstanding operations.

"The timber resources of our section of Canada," says Mr. Rowe, "are of a class and kind that promise to make the district the pulp and paper center of the world."

His optimism is borne out in another recent statement in which his company is carefully considering a proposal for a third newsprint machine. During the past year or so, an extensive modernization and improvement program has been carried out with a view to increasing capacity and bettering quality.

When a *PULP & PAPER* editor visited Fort William recently General Superintendent Chris Michels stated the company was currently producing 145,000 tons of newsprint a year, 70,000 tons of sulfite pulp, 110,000 tons of groundwood pulp and 2400 tons of sulfite screenings. The plant utilizes 750 cords of wood every operating day.

During the past year considerable construction was carried out in connection with extension of the digester house and blow pit room, and installation of a 19-ft. digester originally built by Willamette Iron & Steel Works at Portland, Ore., added about 50 tons to the sulfite mill's daily production. The circulating system installed was manufactured by Electric Steel Foundry, also of Portland.

Stock regulating equipment for the sulfite mill was manufactured by Askania Regulator Co.; the circular wooden stock and white water tanks by H. E. Mott Co., Brantford, Ont.; brown stock pump by Allis-Chalmers, and the screened stock and white water pumps by Canada Pumps, Ltd.

Pulp drying equipment consists of two Kamyr lapping machines, a Flakt dryer and pulp conveyor system, installed by Paper Machinery, Ltd.

### New Grinders

One of the major developments at Great Lakes has been the installation of a whole new groundwood room with seven lines, each consisting of two Waterous Great Northern low-feed magazine-type grinders driven by 5500 hp. motors operating at 257 rpm—a surface speed of 4500 feet per minute with 67 and 54-in. pulp stones—eight Nortons and six Carborundums. The grinders are fed from a water trough running down between the grinders which floats the wood down to position. Constant current is maintained in these



265-in. machine, and new press rolls.

A new Bagley & Sewall rewinder is now in operation, serving both machines in combination, and Dominion Engineering Co. has installed Pope reels on both the paper units.

In other parts of the plant a battery of four Dunbar flat screens was installed by Sherbrooke Machineries, Ltd., to facilitate the production of glassine pulp.

Outside the paper mill considerable new construction has been under way, including the building of a new jackladder, a sulfite pulp storage shed, a conveyor from the pulp storage to the warehouse.

### Key Personnel

With Mr. Michels, in charge of operations as general superintendent, are:

S. T. McCavour, resident engineer; R. I. Jorgenson, plant engineer; W. B. Southon, woodlands manager; J. H. Godden, logging engineer; H. A. Kelley, paper mill superintendent; C. J. Jeffrey, groundwood mill superintendent; W. Quirk, steam engineer; E. S. Anderson, electrical superintendent; B. Bulger, sulfite mill superintendent; H. G. Rivers, purchasing agent.

### President Rowe's Views

Mr. Rowe, as president, has his head office at 159 Bay Street, Toronto. He has taken a keen interest in plans for the most economical utilization of the area's timber resources.

Mr. Rowe blames much wood inefficiency on the sawmill operator who in certain sections of Ontario persists in using for saw logs trees that are suitable only for pulp production. He estimates that 900,000,000 cubic feet of wood is being wasted annually in sawlog and sawmill operations—"almost enough to supply requirements of all the pulp and paper mills of Canada."

The Great Lakes president maintains one cord of the average-sized tree of the Thunder Bay area, processed into pulp

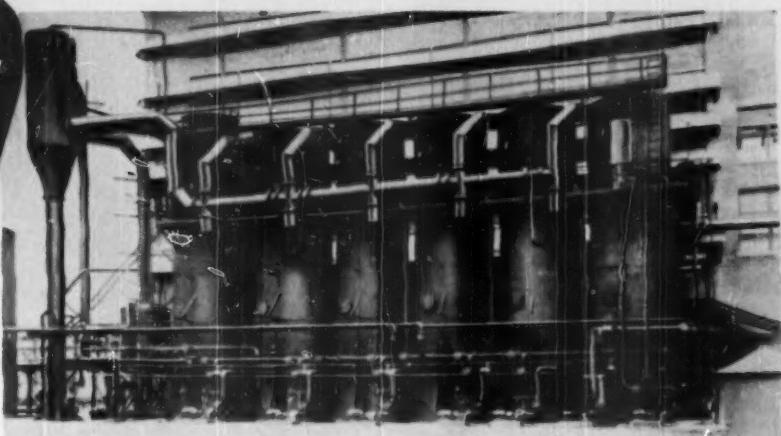
GREAT LAKES CO. OFFICIALS (l. to r.): CHRIS A. MICHELS, Gen. Sup.; S. T. MCVAOUR, Resident Engineer; R. I. JORGENSEN, Plant Engineer; W. B. SOUTHON, Woods Manager; J. H. GODDEN, Logging Engineer.



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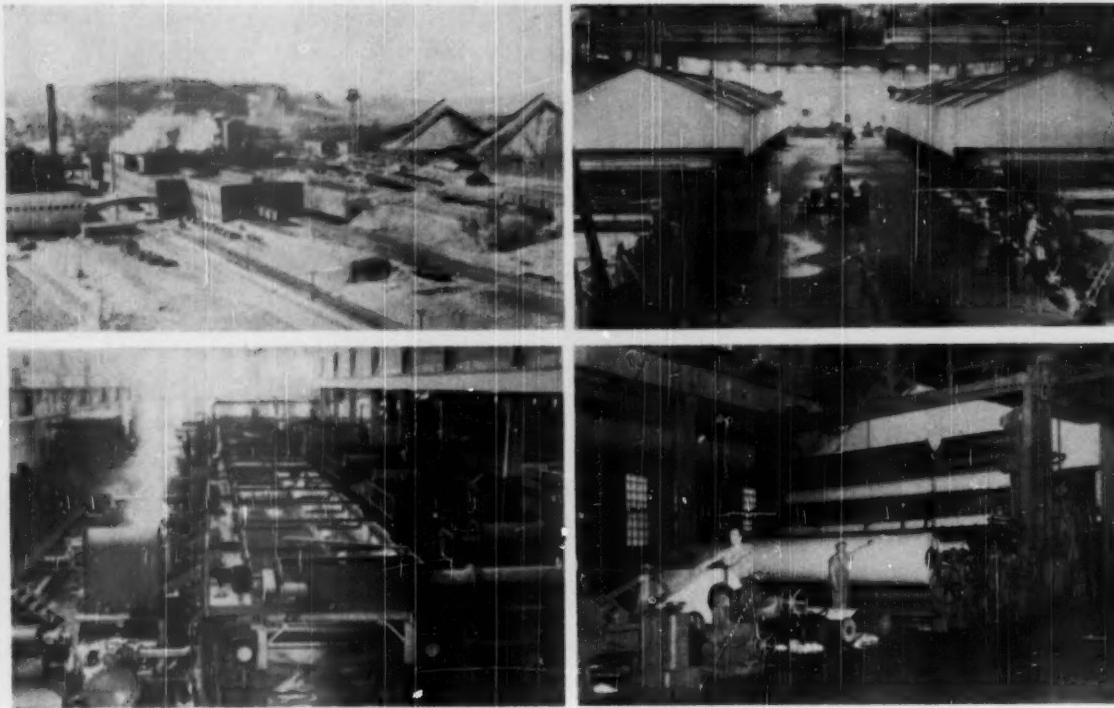
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VIEWS AT GREAT LAKES PAPER CO., Fort William, Ont.

Top left: General view of paper and sulfite mills and blockpiles.

Top right: Two Bagley & Sewall machines—265 and 305 inches wide, respectively, with Ross heads and ventilating equipment.

Lower left: New grinder room with Waterous magazine-type grinders.

Lower right: New Bagley & Sewall rewinder serves both big paper machines.

and paper products, will give twice as many people good living wages and provide double the amount of export revenue as if the wood was used in the production of lumber.

"Scientific research has developed many hundreds of new uses for wood products," says Mr. Rowe. "On the other hand, in many regions, streams, creeks and wells are drying up for want of trees. As a result, the country faces a challenge unheard of 50 years ago. In the early days when large pine logs were piled and burned to make room for wheat and potatoes, reckless and extravagant utilization was common practice and of little concern. But during the past five decades the utilization of our forest wealth has been revolutionized."

#### Bark Flash-Drying Pilot Plant Is Success

The Great Lakes Paper Co. at Fort William, Ont., has been experimenting for several years with a bark disposal problem and has developed a procedure that effects substantial economy in coal consumption through utilization of flash-dried wood refuse.

Experimentation started more than a decade ago. An early step was the purchase of four Giant Nekoosa bark presses, built by Hydraulic Machinery Co., driven by a single 75 hp. motor. These four presses handle bark from 1000 to 1500 cords per day during peak periods when, however, the bark coverage is less than normal.

The dutch ovens to burn this refuse were incorporated in a new Heine boiler equipped with two Strong-Scott pulverizers. The refuse was fed into the oven by two discharge spouts through the arch in each section.

This arrangement, while effective, was considered far from ideal. It was felt that something new in dryer design was essential. In co-operation with Combustion Engineering Co., a pilot plant for flash-drying of wood refuse and bark was set up. Flash-drying has been described as the practically instantaneous removal of moisture by turbulent mixing of hot gases and wet particles. The flash-drying system consists essentially of a compound mixing mill and fan, plus a cyclone separator.

The most important pre-requisite to a flash-drying system and, incidentally, to efficient combustion with or without drying was found to be reduction of the material to the smallest particle size commensurate with reasonable power requirements. To attain that objective two Mitts & Merrill hogs, manufactured in Saginaw, Mich., were added.

The setup was designed to handle 150 tons bone dry daily, or approximately the bark from 2000 cords a day. Engineers at Great Lakes estimate that hogging the bark without drying increased steamflow by about 10,000 lbs. per hour; hogging and drying together increased the flow by 20,000 lbs. of steam per hour. The new system has required only one more man per shift.

An additional advantage not originally anticipated is that of wet barking in winter months because it is no longer necessary to store surplus bark under freezing conditions with its accompanying difficulties. This has drastically increased the rate of barking possible for that period, according to Assistant Plant Engineer W. G. Tamlyn.

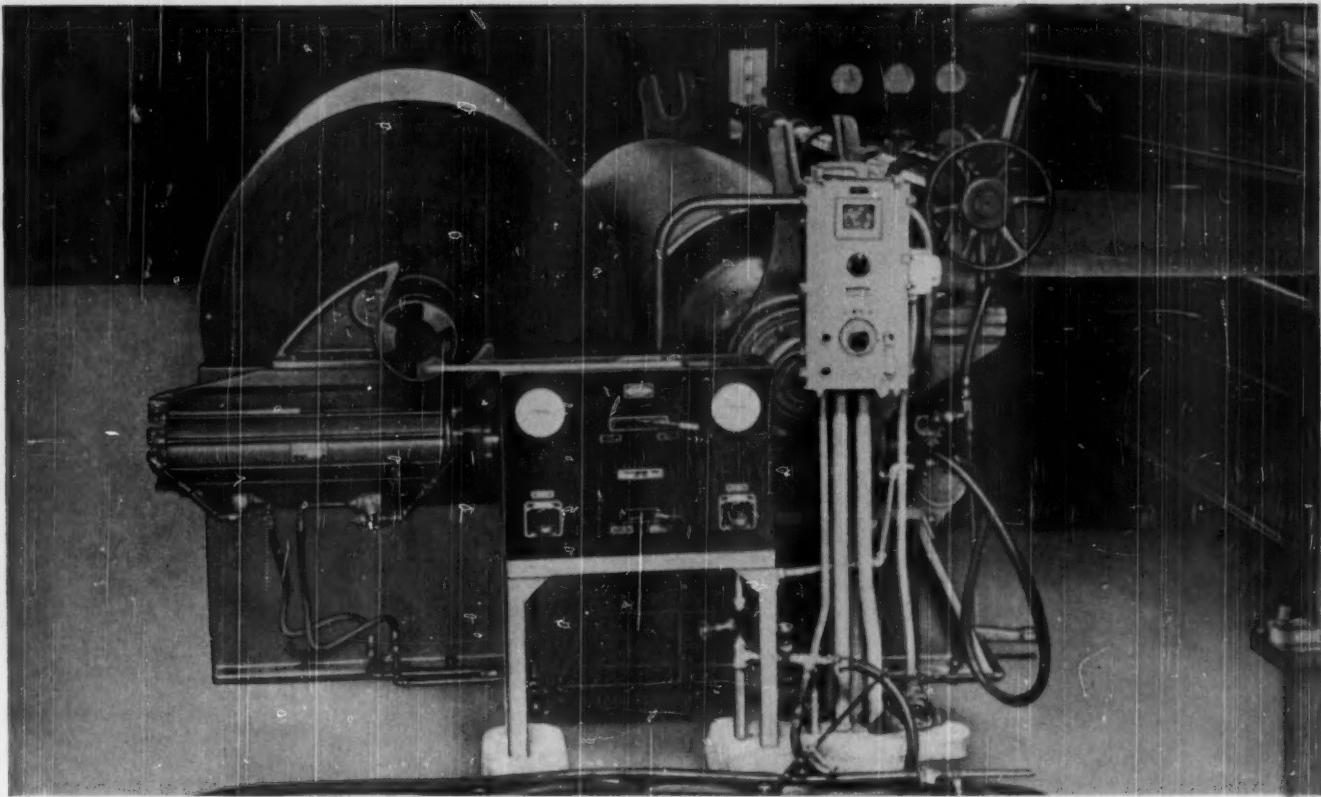
#### Price & Pierce's London Chief on Mill Visit

There was unusual significance in the attendance of Anthony Benn of London at the opening of the H. R. MacMillan Export Co. Pulp Division mill at Harmac, B. C., recently. Mr. Benn is managing director of Price & Pierce, with a worldwide business in pulp and lumber, and most of the output of the Harmac mill is being marketed through that company.

But the association of Mr. Benn with the MacMillan organization and British Columbia goes deeper than that. More than a decade ago Anthony Benn, then in his early twenties and just beginning his career in the industry as the son of the famous Frank Benn, for many years vice chairman of Price & Pierce, went to the West Coast and as a part of his training went to work for H. R. MacMillan Export Co. He studied logging and sawmill technique at first-hand.

It was while in British Columbia that young Benn met Maureen Denby, who became his wife and the mother of their three young daughters.

During his recent visit to Western Canada Mr. Benn was accompanied by Dr. John S. Bates, director of Price & Pierce operations in Canada, with head office in Montreal, and H. A. Hughes, manager of the company's New York office.



Puseyjones Improved Type Uniform Speed Reel with pneumatic adjustable loading mechanism.

## Reel Changes Simplified

The role of the Reel in paper-making at today's high speeds is an important one. An inefficient, old-type Reel will hamper production, cause high "broke" and result in increased tonnage costs.

The Puseyjones Improved Pope Type Uniform Speed Reel is outstanding for simplicity of operation. Many of America's leading mills, and mills in other countries, have included this improved type Reel in their modernization plans with profitable results.

An outstanding feature of this Puseyjones unit is

the pneumatic adjustable loading mechanism which greatly simplifies reel changes and gives added safety to the operation. There's no loss of valuable production time. Operation is at constant paper speed. Controlled tension and accurate roll-to-drum pressure results in uniform rolls. Smoother winding and ease of operation are additional features.

Find out how a Puseyjones Improved Pope Type Uniform Speed Reel can improve your production and give you more uniform paper rolls for better profits. Write us today.

**THE PUSEY AND JONES CORPORATION**  
Established 1848. Builders of Paper-Making Machinery  
Fabricators and Welders of All Classes of Steel and Alloy Products  
Wilmington 99, Delaware, U.S.A.



## Dick Barnes Represents Brown-Hutchinson, Lodding and Others on Coast



R. T. "Dick" Barnes, Jr. (shown in picture) who for a long time was International Nickel's sales representative and principal "contact man" in the pulp and paper industry, has moved from New York to San Francisco to represent a half-dozen equipment companies on the Pacific Coast—U. S. and British Columbia—most of them primarily concerned with serving pulp and paper mills.

The name of his establishment and address: R. T. Barnes, Jr., Engineering Aids for Industry, P. O. Box 227, San Francisco, Calif. Effective Nov. 1 he began representing:

Brown-Hutchinson Iron Works, Detroit, Mich., specialist-fabricators of International Nickel's Monel and other alloys;

Biggs Boiler Works Co., Akron, Ohio, well known particularly for rotary digesters;

Lodding Engineering Corp., Worcester, Mass., doctors in California only and Panelyte suction boxes and other products in all Coast areas;

Red-Ray Manufacturing Co., for fast drying techniques;

Trimble Machine Works, Glens Falls, N. Y., for screens and other equipment.

Mr. Barnes also exclusively represents Lupomatic Industries, Inc., New York, tumbling machines; and Ball & Jewell, Brooklyn, N. Y., non-exclusively for grinding machinery.

### The Nickel Situation:— INCO President Explains

Despite an expansion of production, rationing of nickel was made necessary by industrial and military demand, John Fairfield Thompson, president, declares in a recent issue of *Inco*, published by International Nickel Co. He said the company started worldwide rationing as of last July 1, when consumption had reached double the rate in 1939 and 25% over the record year, 1948.

Over \$40,000,000 were spent in postwar years on increasing underground ore facilities to replace open pit ore. End of supplies from the Frood-Stobie open pits will require continued large expenditures, he said, to keep up capacity output.

**CLAUDE L. FARGO**, for several years affiliated with Consulting Engineer O. C. Schoenwerk, and for past two years at Weyerhaeuser Timber Co. Springfield, Ore., plant, has carried out the structural steel design for Longview Fibre Co.'s new 200-ton paper machine addition being installed at the Longview, Wash., plant. Mr. Fargo is currently handling structural design of Weyerhaeuser's recently announced kraft mill to be added to the company's Longview operations.

# HOOKER DIRECTORS IN WEST

## Tacoma Plant Expansion Inspected

AT HOOKER events on Pacific Coast (l to r): E. R. BARTLETT, President; R. L. MURRAY, Executive Vice Pres., and COL. A. H. HOOKER, Western Sales Mgr.



The board of directors of Hooker Electrochemical Co. traveled in a body to the Pacific Coast a few weeks ago to see for themselves the expanded facilities for production of caustic soda and chlorine at their Tacoma, Wash., plant.

The party celebrated the event by holding a regular board meeting at the Tacoma plant, instead of in their usual board room at Niagara Falls, N. Y., by declaring a 10-cent dividend, and by meeting a large assemblage of industrial and public leaders from the entire Pacific Coast at a dinner in the Winthrop Hotel, Tacoma, on Nov. 1. The group—estimated at some 200—was a goodly portion of the "cream" of industrial, management and government personalities of the Far West, some of whom came over 1,000 miles for the event.

Edwin R. Bartlett, president of Hooker, told the group that his company's business has increased in ten years from \$7,000,000 to over \$20,000,000. He told of how Hooker has developed cordial and cooperative relations with public utilities, with labor and with customer-consumers.

John P. Marquand, famous novelist who wrote "The Late George Apley" and other popular books, and who is one of the seven directors of the Hooker Company, also journeyed to Tacoma from his home in Newburyport, Mass., and he gave an amusing philosophical address on changing foibles of people over the years.

Col. Albert H. Hooker, western sales manager for Hooker, was master of ceremonies.

R. L. Murray, executive vice president; Roger Wolcott Hooker, vice president for sales; Bjarne Klaussen, vice president for production; E. Lewis Burnham and C. L. Lutkins were other directors present. Besides Col. Hooker, the welcoming host officials of Tacoma included Dr. John D. Rue, works manager; Thomas E. Moffit, assistant works manager, who recently joined the company, and Russell O. Vognild, assistant western sales manager.

Tacoma expansion, primarily to serve pulp and paper mills, consists primarily of the installation of two circuits of the new Type S-3 electrolytic cells which have far greater capacity than the old cells replaced. In addition to the new cells, extensive additions have been made for treating and handling brine, for purifying and evaporating caustic soda, and liquidifying chlorine. Triple effect pans have been installed for caustic evapora-



TWO HOOKER ELECTROCHEMICAL CO. APPOINTMENTS: THOMAS E. MOFFIT (left), appointed Assistant Works Mgr., Tacoma, Wash., plant. Cornell graduate in Chemical Eng., World War I naval flyer, he was long active in Pacific Northwest engineering. Joined Hooker in 1930 and has returned to the firm after a short absence. JOHN S. COEY (right), newly appointed Eastern Sales Mgr. Amherst graduate, he has been with Hooker since 1937, first in charge of Process Study Group and since 1943 as Manager of Sales Development. Thus, Trimble, former Eastern Sales Supervisor, becomes Assistant Mgr., Niagara Sales Office.

tion and a new boiler supplies the additional steam requirements. Other facilities include a new cell construction and renewal building, additional storage tanks, enlarged water supply system and expanded dock facilities.

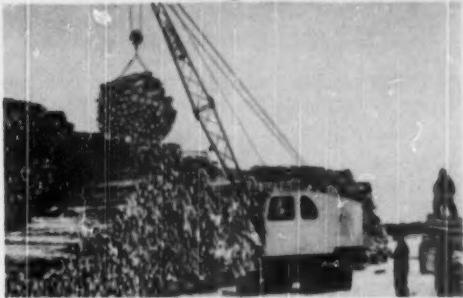
**D. W. BERGSTROM** slammed a 270 game and a 611 series with a 36-pin handicap to set the highest individual score recently in the Bergstrom Paper Co.'s ten-team bowling at Neenah, Wis.

**WALTER F. WOLFE**, superintendent, Mac Sim Bar Paper Co., Otsego, Mich., recently underwent amputation of his left hand just above the wrist. The amputation was made necessary because of an injury he had sustained while working upon a paper machine.

**FRED SIEVERS**, groundwood superintendent, Crown Zellerbach Corp., Camas, Wash., has been appointed national chairman of wild flower protection and propagation in the Men's Garden Club of America.

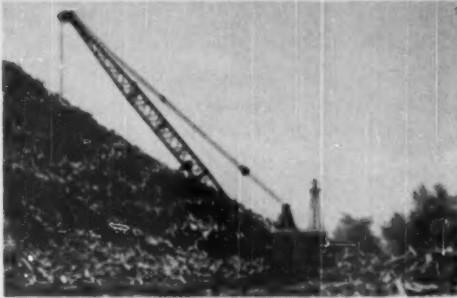
# PULP PICTURE QUIZ

HOW MANY OF THESE 6 PULPWOOD PROBLEMS  
CAN YOU SOLVE WITH A LORAIN?



## STACKED WOOD?

A cable sling --- a Lorain "TL" on crawlers --- and this snow-covered yard has the solution to a wood stacking problem --- picking them up and laying them down faster, higher and cheaper!



## PILED WOOD?

Pulpwood grab on the end of a 75 ft. boom of a Lorain-820 and this pulp company has the time-saving, low-cost answer to transferring wood from block pile to mill conveyor.



## SHORT WOOD?

A Lorain-41 with a wood grab attachment moves about the yard of this paper maker and answers the need for a fast, highly maneuverable handler of 4 ft. wood.



## LONG WOOD?

This pulp company finds the answer to handling long wood in a Lorain-80 Crane used to build stockpiles. It doubled the number of saw logs previously stockpiled.



## UNLOAD CARS?

A one-man unloading "crew" was this concern's answer to lower car unloading costs. A Lorain-820 with a pulpwood grab makes short work of picking pulp off cars.



## LOAD BARGES?

A Lorain "TL" with special 4-legged bridle unloads trucks to barges and cuts pulpwood handling cost 50%. A Lorain will save on every loading or unloading operation.

**ANSWER: THERE'S A LORAIN  
FOR EVERY  
Pulp Handling Job!**

THEW **LORAIN**  
CRANES FOR PULPWOOD HANDLING



All across the North American continent, north to south and east to west, the industry is improving woodlands techniques and introducing large scale conservation, reforestation and mechanization.

## SCORES MANAGEMENT POLICIES

### Southern Meeting Hears Sharp Criticism

Vigorous criticism of outmoded handling methods of harvesting pulpwood and use of an "extremely high-cost, unsuited transportation medium"—a light truck—was voiced at the pulp and paper superintendents' meeting in Asheville, Oct. 12, by J. E. McCaffrey shown in picture, who is president of the American Pulpwood Association. Mr. McCaffrey is wood procurement manager for International Paper Co.'s big Georgetown, S. C., mill.

Many people, including top management, engaged in making paper have a very superficial knowledge of the problems which confront woodlands managers, he said.

"I can think of no large industry in North America that would dream of investing 10 to 30 million dollars in a plant without first securing sufficient raw material to protect the investment," said Mr. McCaffrey.

There is no other large industry in the South, he said, that would think of procuring their principal raw materials on the "fly-by-night basis" employed by the paper industry. In the Southern pine region it has been the policy of many mills to thoroughly investigate all the factors necessary for the location of a plant, with the exception of wood supply, according to the I.P. Southern Kraft official. In some instances cursory examinations have been made of timber supply but in most cases the acquiring of stumpage has been left out of the picture, he said. Such procedure immediately puts the woodlands manager in a most difficult position, particularly in acquiring fee stumpage which is needed to protect the plant investment.

**ON TOUR AT CHAMPION PAPER & FIBRE CO. mill at Canton, N. C., delegates from Asheville Supts. Convention saw these farmers' trucks bringing in wood. Left: Canton mill scaler checks in peeled wood on owner's GMC truck. Owner**



ed, but only recently has top management been sufficiently interested to spend a few meager dollars on improvement of woods harvesting methods. With few exceptions, our present method of producing wood is exactly the same as they were 30 years ago, with the exception that trucks are used for transportation instead of animal power, according to Mr. McCaffrey.

He declares handling of wood stick by stick was satisfactory if wages were about \$1.50 per day, but not feasible when the scale is 75 cents per hour with likelihood of further increases.

#### **His Comments on Trucks**

After describing some of the new types of equipment and methods found in a few locations, Mr. McCaffrey condemned the use of the ordinary light, highway truck in the woods. He said:

"All of the 12 million cords of wood used by industry in South goes on a truck at least once, and in some instances twice, before arriving at destination. The type of truck which is most commonly used is probably the most expensive piece of equipment that could possibly be employed for this purpose. The main reason for its use is the fact that it is cheap and can be purchased by the type of individ-

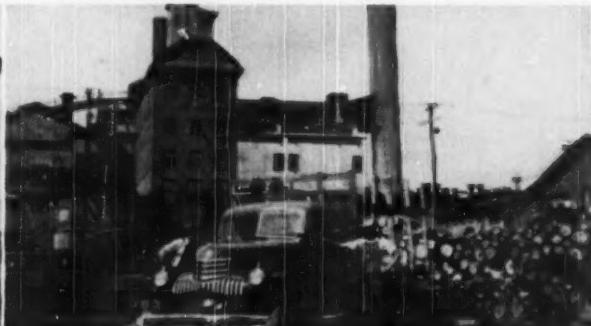
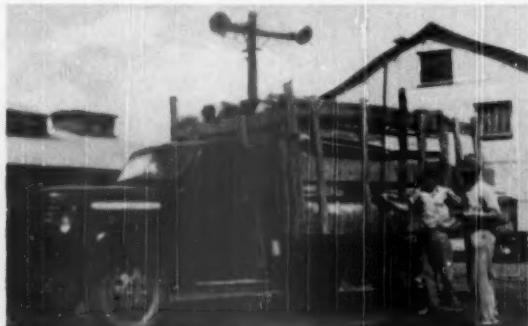
#### **When Prices Go Sky-High**

Acquisition as an afterthought becomes difficult, said Mr. McCaffrey, because landowners adjacent to the mill are neither naive nor ignorant. Knowing the plant under construction must have wood, the owners immediately raise their land and timber prices.

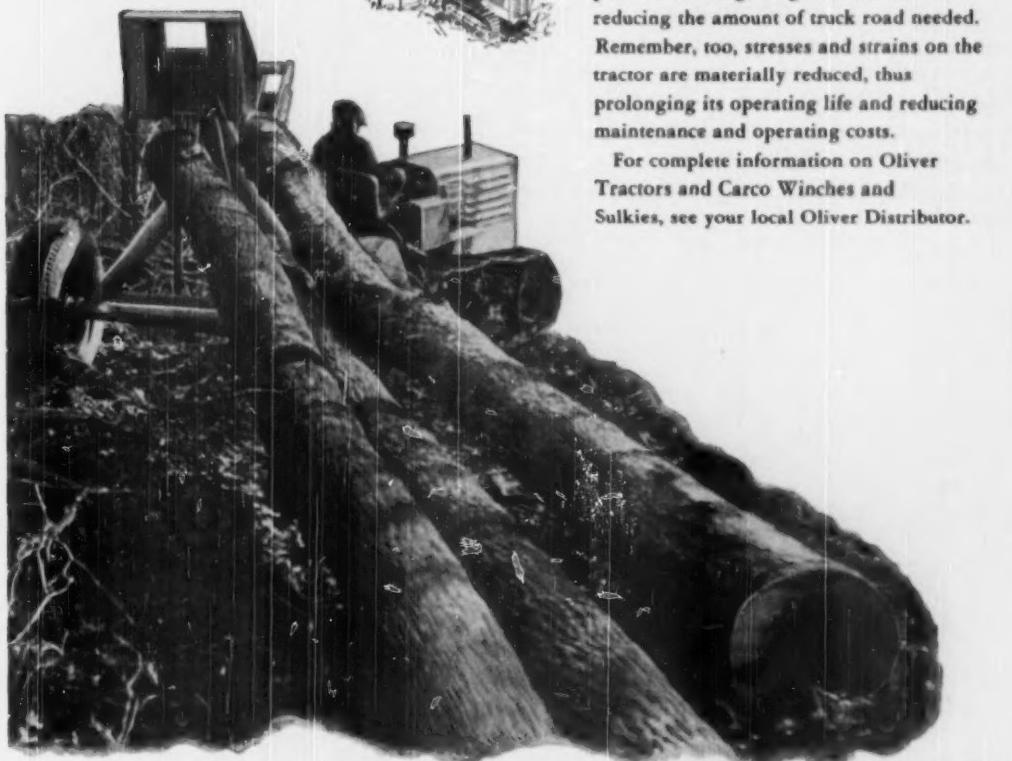
After discussing growing and rotation of tree crops, the speaker commented that—except in Texas—there are no contracts between mills and pulpwood dealers. The mills depend upon wood supply from a number of people who might decide overnight to discontinue business tomorrow.

Great strides have been made in improving methods in the mill, he comment-

gets \$3 extra per cord for peeling hardwood. Right: A farmer uses his own Chevrolet truck pulled from his own woodlot. The pulpwood check is counterpart of milk check in Southern woodlands where there's no milkshed of importance.



*Easy to Get Out  
the "BIG ONES"*



Here's the easy, economical way to get out tree-length logs . . . an Oliver Crawler Tractor and Carco Winch and Sulky.

With this cost-cutting unit, you can haul more and bigger loads. The powerful winch enables you to snake out logs from inaccessible areas. The rubber-tired sulky materially increases the load that can be efficiently and economically carried since the load is carried with one end of the logs raised off the ground. The load-carrying ability of the tractor is increased by decreasing the load resistance.

Oliver Tractors and Carco Sulkies make possible far longer log hauls, thus reducing the amount of truck road needed. Remember, too, stresses and strains on the tractor are materially reduced, thus prolonging its operating life and reducing maintenance and operating costs.

For complete information on Oliver Tractors and Carco Winches and Sulkies, see your local Oliver Distributor.

## THE OLIVER CORPORATION

Industrial Division: 19300 Euclid Avenue, Cleveland 17, Ohio

A complete line of Industrial Wheel and Crawler Tractors



us who is now engaged in the production of wood. I am referring to the ton and a half or 2-ton conventional truck, commonly referred to as a 'bob-tail' by woods management. The initial cost of this truck is around \$2,300, and during its lifetime will probably haul, under the various methods now employed, a total of around 1,500 cords before it is reduced to scrap. You can arrive at the amortization which must be charged per cord by the simple process of arithmetic, and I am sure everyone will agree that this is extremely high.

The reason that this is such an expensive piece of equipment is the fact that it is overloaded and operated over a terrain for which it was not designed. Furthermore, the tire cost per cord during the life of this truck is tremendous for reasons mentioned above, except that these tires are also employed to polish stumps in the area where the wood is being cut. I am sure that everyone agrees that this type of operation is not only inefficient but also very expensive and the industry could well afford to spend a considerable amount of money in the development of suitable off-the-road equipment which would eliminate this terrific expense."

The postwar tendency was to drift back to "the good old days" and forget development of new techniques but this can't happen because working conditions and wages will not permit, he warned.

### Vast Unused Wood Where Ten Mills Already Stand

Nearly 38 million cu. ft. of unused wood resources, representing ten million dollars in payrolls, are available in Clark, Cowlitz, Skamania and Wahkiakum counties, the State of Washington Institute of Forest Products reported in its Institution Bulletin No. 9. These counties are near and serve several pulp and paper mills in the lower Columbia-Willamette Rivers area. There are ten mills in the area and several not far distant.

The largest amount of unutilized wood available in the counties is in the form of intermediate cuttings from second-growth stands, the Bulletin reports. The amount considered available by controlled periodic harvesting totals 17,932,000 cu. ft. The amount of logging leftovers lying on cut-over lands was slightly less, 14,586,000 cu. ft. Manufacturing residuals were about one-third of the logging leftovers, 5,434,000 cu. ft.

### The Shovel Changes

A. W. Smythe, vice president and general manager of The Thew Shovel Co., Lorain, Ohio, announces that M. B. Garber has assumed the position of director of sales for the company. Mr. Garber announced appointment of J. T. Cushing as sales manager, in charge of all domestic sales except those to the government. Robert Maynard remains as export manager.

Q. J. Winsor relinquishes his present duties as assistant general manager to be manager of development sales, under the general manager.

# LOUISIANA MEETING



Equipment and manpower needs of the pulpwood procurement side of the Southern pulp and paper industry proved to be the major topic of discussion at a meeting conducted in Monroe, La., Oct. 19-20, of the Southwestern Technical Committee of the American Pulpwood Association. John Thompson (shown in picture), of Johns-Manville, Natchez, Miss., presided as chairman.

The initial topic of the meeting was the design of pulpwood rack cars. The association is engaged in heading up a program designed to impress the carriers with the dissatisfaction of the mills with the use of box cars for pulpwood, which involves a heavy extra labor expense, and the desirability of the construction and/or building of an adequate number of cars designed for pulpwood movement. In view of labor shortage days that may come it is realized that an open pulpwood rack car can be unloaded in a few minutes with the crane with which mills are equipped, whereas pulpwood placed in a boxcar designed for other types of freight must be carried out piece-by-piece with manual (touch) labor.

The meeting, however, devoted most of its time to the proposed manpower and equipment survey initiated at the request of the National Security Resources Board.

Those participating in the meeting included: From International Paper Co., R. E. Leslie, W. D. Bottle, W. M. Bailey (Springhill), Christy Roberts (Bastrop), C. G. Snyder (Camden), Earl Porter (Mobile); Brown Paper Co. (Monroe), C. E. Wilds and H. F. Easterling; Crossett Paper Co. (Crossett), C. J. Maki and S. V. Sihoven; Gaylord Container Corp., (Bogalusa), Guy Curtis; Champion Paper & Fibre Co. (Huntsville), Frank R. Crow; Flintkote Co. (Meridian), A. W. Nelson; Gulf States Paper Co. (Tuscaloosa), E. E. Loper and R. V. Miles; North Carolina Pulp Co. (Plymouth), F. E. Ocheltree; Johns-Manville Products Co. (Natchez), R. Cuendet, H. H. Howard and John W. Thompson (chairman); Hollingsworth & Whitney Co. (Mobile), W. J. Bridges, Jr.

### Program on Pulpwood

Western Forestry & Conservation Association's 41st annual forestry conference program, to be held Dec. 6-8, at Sir Francis Drake Hotel, San Francisco, Cal., prominently features pulp, paper, and board mill leaders, according to Stuart Moir, forest counsel.

The program specifically includes primary consideration of three main sections of the business of forestry—growing, protecting, and harvesting the forest crops.

Among the programmed pulp-paper-board industry personnel are the following: E. W. Tinker, executive secretary, American Paper & Pulp Assn., speaking on "Forestry as a Business in the Pulp & Paper Industry"; John E. Liersch, assistant vice-president, Powell River Co., Ltd., "Some Observations on Forestry Practice in Scandinavia"; E. C. Rettig, logging manager, Potlatch Forests, Inc., "Growing the Forest Crop in the Idaho White Pine Region"; George L. Drake, vice-president, Simpson Logging Co., "What to Do About Snags"; Wm. D. Welsh, Crown Zellerbach Corp., executive offices, "Tree Farming in Managed Conservation"; E. P. Stamm, logging manager, Crown Zellerbach Corp., "Forest Conservation in Douglas Fir Region"; E. T. F. Wohlenberg, general manager, Masonite Corp., "Influence of Forest Land Taxation on Managed Conservation."

### Forestry Course at McGill

McGill University, Montreal, is sponsoring a ten-lecture course on woodlot forestry, according to announcement by Dr. F. S. Howes, director of university extension. The lectures will be given by Lief Holt, silviculturist of the Pulp and Paper Research Institute of Canada.

CLAUDE MULLEAGUE has been named sales engineer in the Western Division Sales Department of Caterpillar Tractor Co., San Leandro, Calif., according to B. L. Haglund, western sales manager. As supervisor of engine installations, Mr. Mulleague's technical engineering experience will be available to Caterpillar distributors throughout the Western Division, including British Columbia and Alaska.

C. S. (PAT) HERR of Brown Co., Berlin, N. H., has objected good naturedly to a reference to him as "an ex-forester." Of course it should have been "ex-U. S. forester," meaning once with the Forest Service. Mr. Herr is a vice president of the Society of American Foresters. Anyhow, he writes further, "your article does convey the important points we discussed."



### MEETINGS

Western Forestry & Conservation Assn., Sir Francis Drake Hotel, San Francisco—Dec. 6-8.

Society of American Foresters—Golden Anniversary Meeting—Mayflower Hotel, Washington, D.C.—Dec. 13-16.

Truck Loggers' Association of B. C., Hotel Vancouver, Vancouver, B. C.—Jan. 17-19.

Forest Products Research Society Annual Meeting and Show—Convention Hall, Philadelphia—May 7-11.

# TITAN

BLUESTREAK

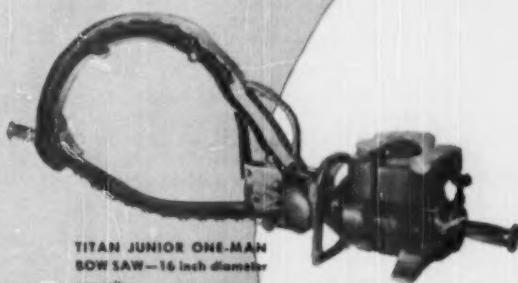
# Has Everything!



TITAN JUNIOR ONE-MAN  
SAW—complete bar, swivel,  
automatic clutch—3 H. P.



TITAN JUNIOR SAW—equipped  
with accessories for use  
by two men.



TITAN JUNIOR ONE-MAN  
BOW SAW—16 inch diameter  
capacity.



TITAN AUTOMATIC  
BLUESTREAK TWO-  
MAN SAW—auto-  
matic clutch, two-  
cylinder, two-cycle,  
opposed type 12 H.  
P. motor.

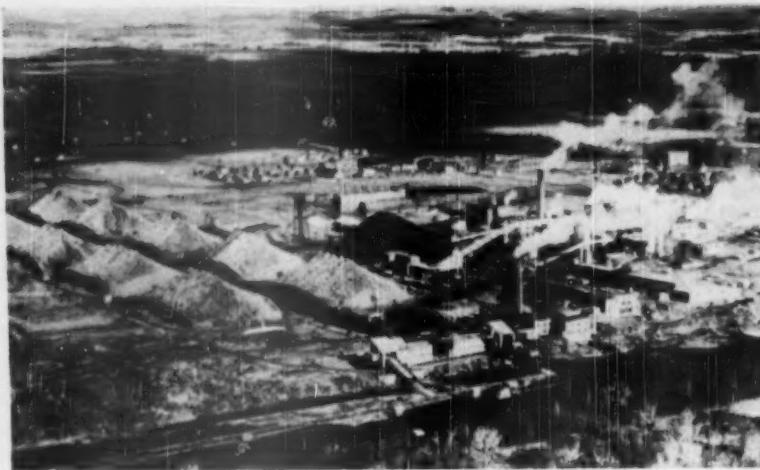


TITAN CHAIN SAWS, Inc.  
SEATTLE 4, WASHINGTON



# Integration in Gatineau

**460,000 Cords Annually Processed --  
Seven Plants Using Common Wood Supply**



AIR VIEW OF INTEGRATED WOOD PRODUCTS operations of Canadian International Paper Co. and associated plants at Gatineau, Que., on north bank of Ottawa River, shown in foreground. Wood block piles and coal pile (the block one—mills consume 700 tons of coal daily) are at left. Wood rooms are in foreground on river front. Behind are pulp and paper mills, Masonite, International Fibre Board, and plywood plants. Here Commercial Alcohols Ltd. has alcohol and magnesia plants. It is one of most diversified and largest wood use centers in the world.

On the north bank of the Ottawa River, about six miles from Canada's capital city, is the town of Gatineau, Quebec, and here are clustered a group of plants operating under the control and management of Canadian International Paper Co., or associated with that company in use of its resources, which represent one of the world's most completely integrated combinations of wood-using industries. For concentration and diversification of forest product utilization there is nothing comparable to Gatineau on the Continent except perhaps at Longview, Wash., Cloquet, Minn., Crossett, Ark., and one or two other centers are quite diversified, but not to such an extent.

Scarcely 20 years ago the site of this industry, representing the investment of many millions of dollars, was farm land. Then, in 1927, Canadian International staked its first claim in the Gatineau country with the establishment of a four-machine 600-ton newsprint mill, and this was followed a year later by International Fibre Board, Ltd. In 1940 Masonite Co. of Canada, Ltd., joined the group; then the bleach pulp plant in 1946, and a few months later the plywood mill of International Plywoods, Ltd. In August, 1949, PULP & PAPER described the new industrial alcohol plant operated there by Commercial Alcohols, Ltd., drawing its raw material from the sulfite pulp mill's liquor.

Nor was that the end. Most recent development is Commercial Alcohols' magnesium plant. It utilizes the carbon dioxide from the alcohol plant's fermentation tanks. Cooperatively run with Johns-Manville, the product is used in insulation of steam pipes and boilers.

Thus, in the space of two decades, an amazing transformation has been effected on the land that was once a group of farms. There are 4,000 people at Gatineau now, most of them engaged in the industrial community in one way or another.

It is one of the most active and prosperous towns in Quebec, and it owes everything to the forest and the profitable use to which it has been put by a combination of wise planning, able management, scientific and technical know-how and efficient manpower and machines.

The newsprint mill's output has been boosted to an average production of 830 tons a day shortly. The Fibre Board plant produces about 100,000,000 sq. feet of insulating board annually. The Masonite hardboard unit produces 270,000 sq. ft. of  $\frac{1}{8}$  inch hardboard—enough to cover an area of six acres—every day of operation. The bleach plant produces 200 tons of bleached sulfite dissolving wood cellulose daily to be sold for the raw material for rayon yarn, staple fiber, transparent cellulose film, urea formaldehyde plastics and other products. Alternatively, its output consists of 180 tons daily of bleached sulfite pulp for fine

grade paper mills. The plywood mill, largest plant of its kind using only hardwoods, has a production of 2,500,000 sq. ft. of  $\frac{1}{4}$  inch plywood monthly. It consumes several species not processed at the other mills.

#### Amounts of Wood Used

In terms of wood consumption, what do all these industries represent? Well, the newsprint mill alone requires 300,000 cords of pulpwood annually. The Fibre Board plant, in addition to tailings from the newsprint mill, also uses a considerable quantity of poplar and basswood, and also waste sawdust from the other mills and slabwood from the sawmill operations of the company elsewhere. Additional groundwood required is provided by 12,000 cords of wood annually. The Masonite hardboard factory uses 43,000 cords of wood in a year—nearly all jack pine. The dissolving pulp mill needs about 110,000 cords of wood per year, mostly spruce and fir. The plywood plant takes about 15,000,000 feet B.M. per year—chiefly yellow birch, with some white birch, basswood, elm, oak, maple, ash and poplar.

All of the wood required for these plants, with minor exceptions, is from Canadian International's own limits on the Gatineau River, which joins the Ottawa near the mill town. The company holds nearly 7,000 square miles of forest in this watershed and on this the estimated stand of merchantable timber comprises more than 10,000,000 cords.

The 360,000 tons of finished fiber products from the Gatineau plants require 465,000 cords of wood annually.

More than 80% of the wood requirements is driven down the Gatineau. Most of the balance is delivered by rail, and this includes all the hardwood for plywood.

The river-driven logs are sorted just before the Gatineau empties into the Ottawa. There is a diversion here of the pulpwood to be routed along to the E. B. Eddy pulp and paper mills at Hull and Canadian International's Hawkesbury pulp mill and the Calumet sawmill, another CIP enterprise.

The wood for Gatineau is boomed and towed to the log-holding ground in the Ottawa in front of the mill sites. Four-foot wood is separated from the 12 ft. and 16 ft. lengths and it goes to a jack-ladder hydraulically loaded by both surface and submerged water nozzles, thence to a conveyor feeding the barking drums. The longer logs go up a jackladder, too, but before passing onto the conveyor leading to the drums they pass over a slasher

# CARCO



## ... BUILDS MORE WINCHES FOR MORE TRACTORS THAN ANY OTHER MAKE!

**There's a Carco winch to fit your new crawler tractor regardless of its make or power!**

From the smallest single drum "S" winch to the heavy duty triple drum "K", each Carco winch is matched for top performance on the tractor for which it is designed.

A Carco single drum winch more than doubles your tractor's logging ability. Used alone, with a pan for short hauls, or coupled with a Carco arch for long hauls, it handles bigger loads faster.

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table to be cut into 4 ft. lengths. Six barking drums are used, 12 ft. x 45 ft.

Even the bark isn't wasted at Gatineau. After being pressed, it serves as fuel in a dutch oven-type boiler from which steam is generated for use in mill processes. A new type of furnace has just been installed which realizes a greater heat unit recovery from the bark than the dutch oven. This new unit burns bark and other mill wastes in conjunction with a 200,000 lbs. per hour pulverized coal-fired boiler in the main boiler house of the paper mill. Significant of the Gatineau operation's magnitude is the fact that coal consumption is 600 tons daily.

### **Sorting and Delivery of Wood**

After barking, the wood is conveyed to sorting belts where the wood is sorted according to species. Spruce and fir are considered as one and can be processed together; jackpine must be processed separately for efficiency. The jackpine is separated from spruce and fir, and, after sorting, the wood passes over two separate conveying systems to storage or directly to the mills for use. The huge block piles, eleven of them in two columns served by double stackers operating on rails, are really a sight to see.

During winter, when no wood is driven down river, the wood is withdrawn from the storage piles as required. Rail-delivered wood, excepting that for the plywood plant and the poplar for the Fibre Board plant, is also fed to the barkers

and from there on follows the same route as river wood.

Wood for newsprint and dissolving pulp goes to groundwood or sulfite mill. In addition to wood for sulfite in the newsprint, the wood for dissolving pulp also passes through the wood room. Jackpine for the Masonite hardboard plant also passes through there, but is processed on a different shift from spruce and fir to avoid mixing species.

The wood is further sorted in the wood room so any unclean, knotty or defective wood passes through cleaning machines. It then goes to the chippers which reduce 4 ft. lengths to chips which are screened and delivered by belt conveyor to storage bins over the sulfite mill. Jackpine chips pass over a portion of this conveying system but are diverted to the Masonite plant.

A large washing drum in the wood room facilitates cleaning of wood in winter by removal of ice and accumulated dirt from the wood which comes from storage. Sawdust from chipping is utilized in the Fibre Board plant where it is processed to make stock as part of the furnish for insulation board. Wood wastes from the cleaning machines are burned along with bark for steam. Wood going to the groundwood mill also passes over a sorting belt where short pieces are sorted out, since the groundwood mill can only use wood in 4 ft. lengths. Short pieces are returned to the wood room to make chips for sulfite or Masonite board.

The Sulfite Mill

Sulfur for the acid plant in the sulfite mill is stored in a 4000 ton concrete tank or at times in outside open piles. The burner room is equipped with two rotary burners each with combustion chamber. The hot gas is cooled in spray coolers and blown into three acid towers. High calcium limestone with some dolomite is used. The towers are piped in such a way that two of them operate as a standard reversible system and the third is a continuous weak tower. Capacity of the acid plant is about 450,000 to 500,000 U. S. gallons daily.

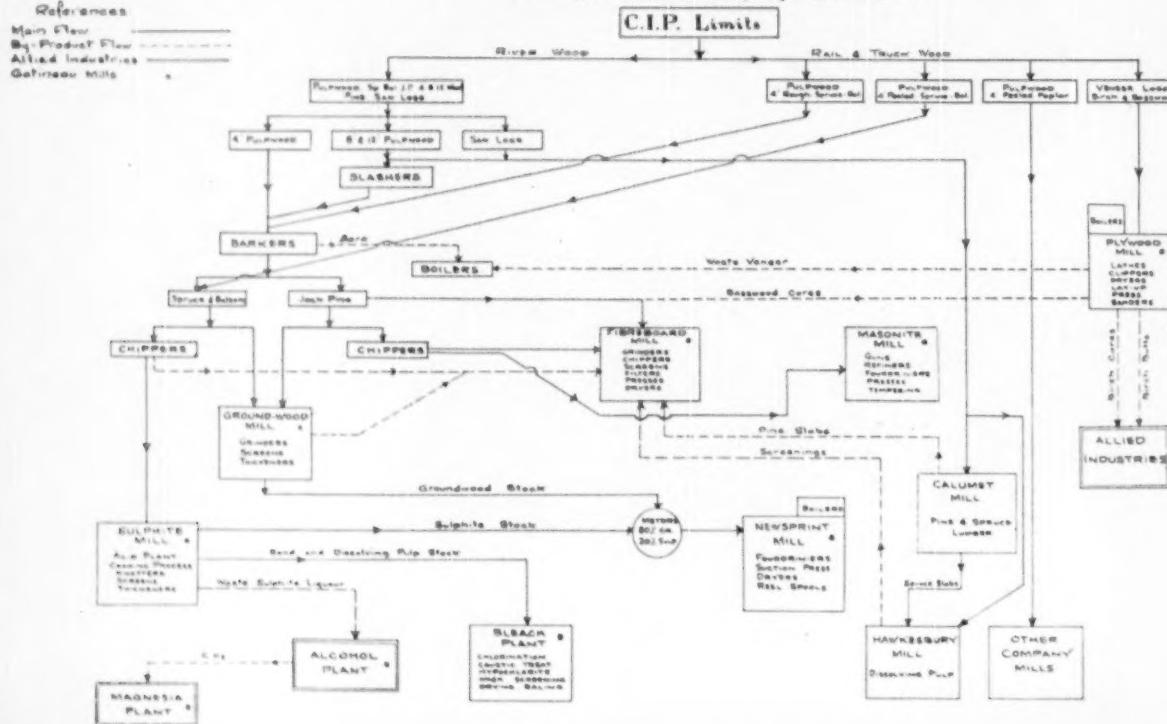
The mill is equipped with ten digesters, seven of them 15 ft. in diameter by 47 ft. high and the other three 18 ft. x 47 ft. All are equipped with forced circulation systems. Acid is taken out by means of a collector ring in the upper part of the digester, piped to a pump on the ground floor which discharges into the bottom cross. The digesters, at the time the mill was visited by an editor of *PULP & PAPER*, were being equipped with heat exchangers for indirect steaming, which would be effected automatically by means of a temperature cam actuated by the temperature of acid leaving the exchangers.

The sulfite mill operates with a standard hot acid system consisting of one 30 ft. diameter spherical accumulator and a second 30 ft. blimp-shaped accumulator. After cooking, the stock from the digesters is blown into concrete rectangular blowpits lined with acid-resistant brick.

Screening of the pulp stock is accomplished by diluting the pulp down to a low consistency for passing through a series of rotary knotters, rotary screens and flat screens in the case of pulp for bleaching. Rejects are sent to the adjacent Fibre Board plant while acceptable pulp is watered or thickened by filters. The pulp from the storage tanks is pumped to the newsprint or bleach plants.

(Continued on Page 80)

FLOW CHART SHOWING INTEGRATION OF WOOD-USING INDUSTRIES  
AT GATINEAU, QUEBEC





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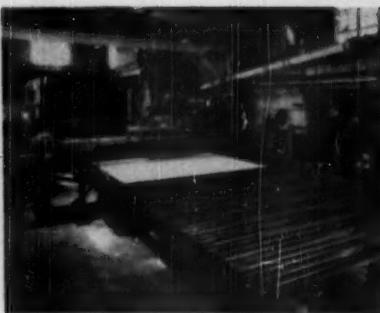
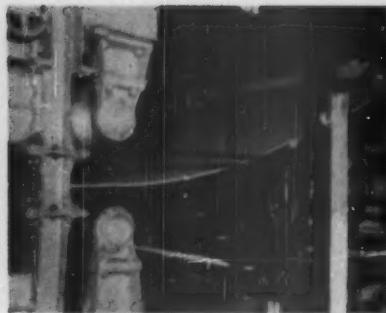
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INTERNATIONAL FIBRE BOARD LTD., process views at Gatineau, Quebec. Left: Run-off from vOlser board former to press section. Middle: Forano Ltd. specially built Press section cutter with Foxboro controls. Right: Automatic Ripple hoist from board machine to stationary rack preliminary to kiln drying.

#### Groundwood Mill

In the groundwood mill, all grinders are of the magazine type and magazines extend up through the ceiling of the grinder room to the charging floor level where the wood in 4 ft. lengths is fed by hand from the storage piles. Of the 32 grinders 34 are of the continuous type. The others are hydraulic units. The 12 lines of continuous grinders each have a 2600 h.p. 660 V 257 RPM motor. Two of the lines of hydraulic grinders have 2400 h.p. 225 RPM motors, while the 16th line of hydraulic grinders has a 3800 h.p. 257 RPM motor. Each pair of stones produces from 40 to 45 tons of pulp per day and consumes about 70 h.p. days per ton.

White water returning from other parts of the process is fed to the grinders at automatically controlled volume and temperatures. After 6 coarse screens, knots and slivers are reduced in a hog and pumped to the Fibre Board plant for further processing. Accepted stock passes to the fine screens after which the pulp is thickened on a battery of deckers or filters. Additional rotarv filters were recently installed.

#### Paper Mill

In the paper mill, stock is diluted and controlled to desired consistency before passing to the news machines by stock meters which discharge to a common chest agitated to thoroughly mix groundwood and sulfite.

The paper machines are standard 272-in. Fourdrinier units.

Fan pump stock is delivered to a battery of six Bird screens having vertical slots in the screen plates .025-in. in width to remove impurities, dirt or slivers which may have escaped previous screening. From these screens it passes directly to the head box of the machine and through a slice onto the wire, the head in the pond in front of the slice being maintained at a level sufficiently high to give it a hydraulic velocity approximating the same as the speed of the wire.

After the presses, the dryer section consists of 47-60-in. diameter dryers.

In addition to the Bird screens installed at Gatineau, 25 altogether, some Vickery doctors

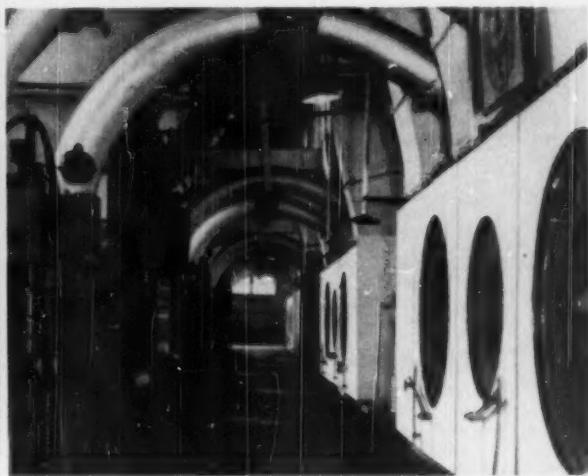
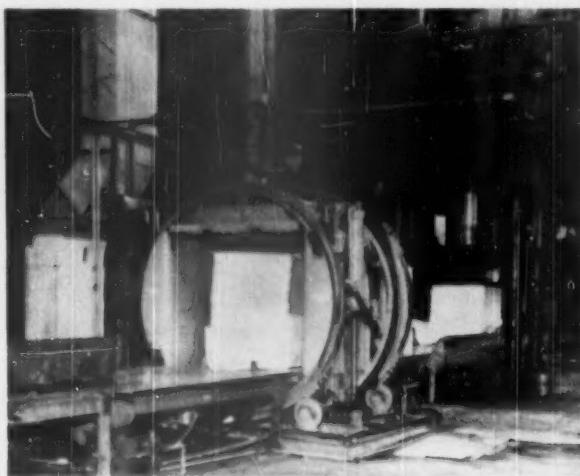
have been set up. There are two Vickery felt conditioners on the press felts of the Gatineau sulfite drying machine, 130-in. wide, and one conditioner has been installed on both the first and second press felts of one of the newsprint machines.

A converting plant converts newsprint rolls to flat sheets in reams for use on flat bed presses, although this accounts for only a small proportion of the output.

#### Bleach Plant

In the bleach plant, the equipment consists of a conventional series of reaction tanks along with filters for the removal of substances dissolved in each particular part of the process. After bleaching, the pulp is formed on a standard Fourdrinier machine, of which the drying section comprises 100 dryers arranged in vertical stacks of 14 dryers each. There are no calenders and pulp is reeled on a dual reel. Reels are cut in rectangular sheets on cutter and automatic layboy.

INTERESTING EQUIPMENT IN THE GATINEAU PULP MILL include the Lamb-Grays Harbor Automatic Layboy and finishing assembly for pressing and packing of pulp, shown at left, and the four Kidwell boilers and Foster Wheeler furnaces shown at right.



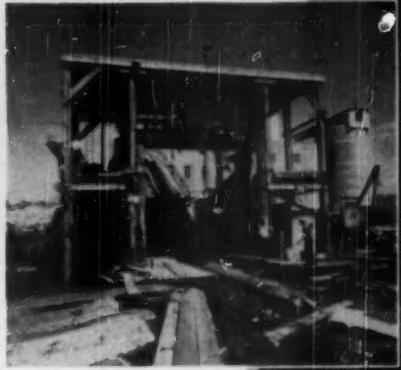
#### Pulpwood Company Scalers in Meeting

Chief scalers of leading pulpwood companies met this fall at Ravine House, Randolph, N. H., to discuss their profession under the joint auspices of the Northeastern Technical Committee of the American Pulpwood Association and the Northeast Pulpwood Research Center of Gorham, N. H.

No field trip was scheduled, but a review of scale rules, measuring sticks, scaling forms, tabulations, and instructions was accomplished by display sets. R. R. Drummond, chairman, opened the meeting. He is with Oxford Paper Co. Among the speakers: B. B. Garland, head scaler of Hollingsworth & Whitney; D. B. Demerritt, Dead River Co.; Harold S. Mountain, Brown Co.; W. S. Bromley, American Pulpwood Association.

#### Pennsalt Moves Chicago Office

Pennsylvania Salt Mfg. Co. has moved its district sales office in Chicago to Suite 1216 Builders Building, 228 North LaSalle St. The new office is under direction of George D. Grogan, district sales manager for heavy chemicals, and John C. Hampson, district sales manager for special chemicals department. Pennsalt moved from 20 North Wacker Drive.



Puget Pulp's efficient plant—modern through-out—handles its logs from mill-pond to chipper in one smooth-flowing operation. En route, they are sawed into convenient lengths and then de-barked by water under 1,300 pounds pressure to the square inch. All logs are cleansed before being cut to bits in the whole-log chipper.

**PUGET SOUND**  
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# South American Mills

## WHAT TWO AMERICANS SAW ON TOUR

A great future for the pulp and paper industry in parts of South America are foreseen by Harry C. Moore, vice president, and Lon Neese, assistant chief engineer, Beloit Iron Works, Beloit, Wis., who returned in late October from over a month's flying tour of South America. They were accompanied by their wives. They visited about 14 mills in all.

"There are many evidences in Brazil and other South American countries that the pulp and paper industry has looked to Europe for their technical equipment and their talent," Mr. Moore said. "There would be many benefits for the South Americans and ourselves, and not only in a narrow business sense, if we can change that thinking."

### Important Conclusions

Some of the conclusions of these Beloit travelers, as expressed by Mr. Moore in an interview with PULP & PAPER:

Chile has excellent pine wood stands and should have a big future in paper.

Brazil has an amazing number of mills—56 in all—and their biggest problem is that "too many are making too many grades, but in the coming years they will go to more specialization with resultant larger tonnages and improved quality."

The biggest problem in Argentina is raw material—also a problem in Brazil. Bagasse, straw and bamboo are used.



LON NEESE (left) and HARRY C. MOORE (right), of Beloit Iron Works, who brought back interesting report of South American tour of paper mills. Mr. Moore is Vice-President of Beloit and Mr. Neese is Assistant Chief Engineer.

### Report of the Flying Tour

Some of the mills visited in Peru, Chile, Argentina and Brazil are very progressive and doing very important scientific development work.

The Beloit party left Wisconsin on Sept. 13 and spent several days at the first stop in Lima, Peru. They travelled by car to Paramonga to see the W. R. Grace & Co. mill there. They have two machines and it was described as a very interesting operation, inasmuch as they are working on the development of bagasse and are making a number of improvements in their operation, which will make it even more practical and advantageous to use bagasse.

The mill is right next to Grace & Co.'s sugar mill so that bagasse is plentiful.

"Characteristic of all mills in smaller countries of this type is that it is necessary for them to make many different grades and the machines must be flexible," said Mr. Moore.

The Sociedad Agricola Paramonga, Ltd., near Supe, Barranca, Peru, has a 110-inch combination Fourdrinier-cylinder and an 86-inch Fourdrinier, each with Yankee driers. A three-digester pulp mill and its products, papers and boards, may average 45 tons daily. Jose Valle Riestra is general manager; Douglas Stephen, chief engineer; Carl Hackbarth, paper mill supt., and Cesar Delgado, ch. chemist and pulp supt.

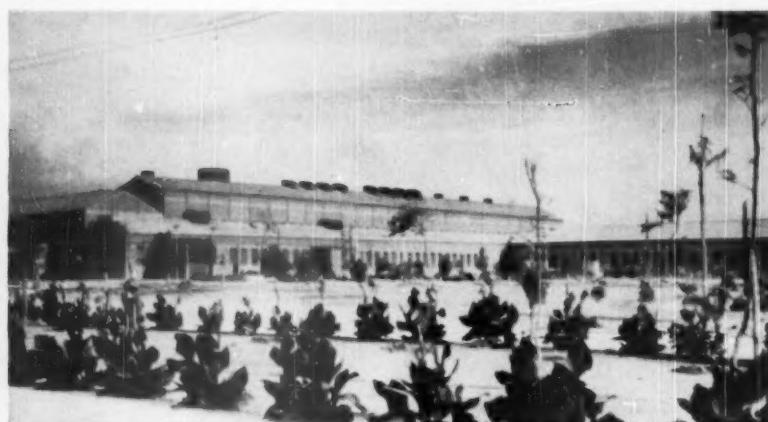
The party then went to Chile and spent three days at Compania Manufacturera de Papeles y Cartones, near Santiago, with Ricardo Ornstein, who is technical director, and Luis Phillippe, who is in charge of the converting operation. They met also the president, Jorge Allesandri, and general manager, Antonio Bascunian. This is the only large mill in Chile and it is a very fine company. It has eight machines operating in the mill in Puente Alto outside of Santiago, and a new mill in the southern part of Chile which will go into production next year. Messrs. Ornstein and Phillippe have been in the U. S. and are very well acquainted with developments here, Mr. Moore said. This company makes about 110 tons daily of newsprint, kraft, writing, tissue and board and makes groundwood and Pomilio straw fiber.

In Argentina they had a very interesting visit with the officials of Celulosa Argentina and saw their two largest mills, one at Zarate and one Juan Ortiz. They have two new machines, one of which started up recently and the other which is to start up in a few months. Here again, this company is very progressive and "their latest new mill additions remind us of the best in this country," said Mr. Moore. They use pine and bamboo.

They visited also with the officials of La Papelera Argentina and saw their mill at Benal. They have two new machines, one of which has started up and is doing a very good job. This mill has eight small machines in all, and make wrapping and board.

"These are the two largest companies there and they are both very progressive," said Mr. Moore. "Time didn't permit us seeing some of the smaller mills, which we would like to do at a later date. The biggest problem in Argentina is raw material. Many projects have been developed for the use of such materials as bagasse, straw and bamboo. There is wood in the

HERE IS A VIEW OF THE PARAMONGA MILL in Peru which makes paper and board from bagasse on two machines. Mr. Moore, in this article, comments on the original development work they have done in bagasse. Announcements released to the cane sugar producing interests tell of collaboration of W. R. Grace and Co., and The Sandy Hill Iron and Brass Works of Hudson Falls, N. Y., in offering the exclusive W. R. Grace and Co. formula for production of paper from cane bagasse. W. R. Grace and Co. entered sugar refining in 1926, when they began the development of the Casa Grace plantation at Paramonga, a 14,000-acre sugar tract on the ideally suited coastal plain of Peru. A long range program, with emphasis on efficiency of operation, high yields and purity was initiated. It is claimed that before the perfecting of the W. R. Grace and Co. formula the profitable production of paper from sugar cane bagasse had presented one of the true conundrums of paper-making.



northern part of the country, which appears to be the logical place for their pulp development."

#### **What They Saw in Brazil**

The Beloit party went from Argentina to Brazil, where they spent several weeks and saw about ten or twelve of the 56 paper mills there. They were amazed at the number of mills in Brazil.

The industry there is comparatively young and many mills were built during the war with locally built machines. These don't run fast and they "expect to make everything on them."

There is a large possibility for North American business there in the future, but unlike Chile and Argentina, a lot of missionary work must be done in the way of educating them to our ways of doing things, the travelers indicated. As in Argentina, one of the big problems is raw material. Actually, the paper industry there has developed faster than the pulp industry, which must come along if the paper industry will be healthy, in the opinion of Mr. Moore.

The two men were particularly interested in visiting the Klabin mill at Monte Alegre, at Parana. This mill was hewn out of the forests, so to speak, and they are only now getting a railroad to the mill. They had to build a city and all other facilities, as well as the mill. "It is a very interesting development and it took a lot of courage for them to spend the money that they have there," said Mr. Moore.

The Klabin mill makes groundwood, unbleached and bleached sulfite and 100 tons of newsprint and 50 of board per day. It has two machines.

"We were advised that the industrial capacity of Brazil has been increased five times in the last 10 years and it isn't difficult to see this," said Mr. Moore. "Sao Paulo, which is the industrial capital of the country, is little different from Pittsburgh, or Chicago, or any of our large industrial cities. They have 50,000,000 people and as their standard of living increases, their consumption of paper will go up accordingly. The immigration from Europe is great, in both Brazil and Argentina, and we were advised that the boats coming over are heavily booked far into the future. I think Brazil has everything to work with and the coming years will see a lot of continued development there."

The party flew up to 28,000 feet across the Andes three times. They returned to New York by plane on Oct. 17.

#### **Brown Is Vice President Of General Chemical**

General Chemical Division, Allied Chemical & Dye Corp., has announced the appointment of Chester M. Brown as a vice president. For the past 21 years, Mr. Brown has held various positions in the production and sales department of the company. During World War II, he was plant manager of West Virginia Ordnance Works which, under General's supervision, established outstanding T.N.T. production records. For the past three years he was director of sales.

#### **PROMOTIONS IN PACIFIC COAST GENERAL CHEMICAL OFFICES**

GENERAL CHEMICAL "backfield shift" on West Coast (l. to r.): WM. R. CLINES, Seattle to Los Angeles; JOHN B. SUTHERLAND, Portland, Ore., to Seattle; H. C. HANSEN, to Portland.



Promotions and addition of a new representative resulted in new faces in three key Pacific Coast posts of the General Chemical Division of Allied Chemical & Dye Corp. Shown (left to right) are William M. Clines, new Los Angeles manager; John B. Sutherland, acting Pacific Northwest manager, Seattle, where he succeeded Mr. Clines, and Harold C. Hansen, newly appointed resident sales representative out of the Vancouver, Wash., works, which makes liquid alum for the paper industry. He succeeded Mr. Sutherland and will live in Portland.

Mr. Clines was in Seattle for six years as manager of General's Pacific Northwest office. Born in Louisville, Ky., he was valedictorian of his class at Xavier University in Ohio, and previously had been with General Chemical in New York, San Francisco, Chicago and West Virginia. Since moving to the Coast he has been champion or runner-up in a number of leading squash rackets tournaments.

Mr. Clines is married and has one son, Billy, Jr. The Clines have bought a home in West Los Angeles.

Jack Sutherland, graduate chemical engineer of Washington State College, 1938, was born in Tacoma, Wash. Was supervisor of the chemical laboratories of Boeing Aircraft in Seattle during war years and joined General Chemical in 1946 as sales representative out of the Vancouver

Works. He is married and has three children.

Mr. Hansen, born in Rapid City, S. D., graduated from South Dakota School of Mines and Technology as chemical engineer in 1943. He was in technical synthetic rubber work on the East Coast and in California before joining General. He is married and has two children.

#### **Lake Erie Paper Makers Told of Quality Control**

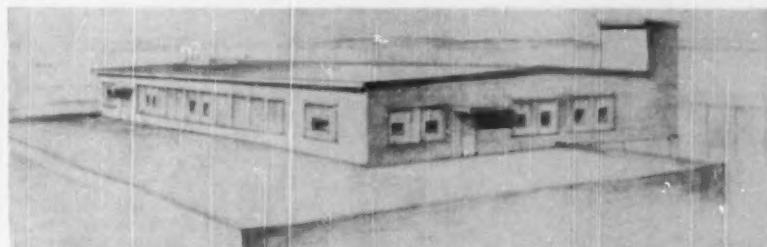
Sixty-one were on hand at the first meeting of the season of the Lake Erie Paper Makers' and Converters' Association on Oct. 20, at the Hickory Grill in Cleveland, O. Howard Coughlin, instructor in quality control at Fenn College and quality control engineer of the Thompson Products Co., presented a talk on Statistical Quality Control. He traced the development of statistical control back to the early 1920's, when W. A. Stewart of the Bell Telephone Laboratories developed methods for controlling products by The Western Electric shops. Present statistical quality control is guided by the American Society for Quality Control with its 43 sections throughout the U. S.

"Gravure Printing" was subject of the Nov. 17 meeting, with Frank B. Johnson of the Intag Division of Interchemical Corp., and Joseph Martin of Champlain Co., Inc., as speakers.

#### **Staff of 20 Occupies New Laboratory**

The new laboratory of Soundview Pulp Co., world's largest sulfite pulp mill, at Everett, Wash., provides the latest in equipment and facilities for research, control, instrumentation, etc., according to Leo S. Burdon, vice president and general manager.

A laboratory staff of 20 occupy the new quarters, headed by R. L. Thieme, who is technical director, and Adolph Orup, who is director of research. A new library, 14 by 24 ft. has been provided as well as space for further development work. There is provision for additions to the laboratory when, and if, required. The main contract was placed with Howard S. Wright Co., Seattle.



SOUNDVIEW PULP'S NEW RESEARCH AND TECHNICAL CONTROL LAB

Drawing shows 81 by 127 ft. single story laboratory located on top of new roll storage building adjoining present machine room and pulp storage warehouse of the Everett, Wash., mill.

# BLANDIN ADDITIONS

## NOW ON 100% SUPERCALENDERING

What was a newsprint mill just eight years ago has now become a 100% producer of high quality supercalendered book and magazine papers.

Step by step in those eight years, this transition has taken place at Blandin Paper Co., up at Grand Rapids, Minn., where the Mississippi starts its 2,486-mile meandering to the Gulf. This month it has been completed as a new Appleton Machine Works supercalender is being broken in. As a result, all of Blandin's 160 tons-a-day production of A and A1 printing papers can be supercalendered now. Actually, the mill has made no newsprint for over three years, but the most recent installations have completed the evolution to 100% top quality products.

Charles Kenneth Blandin, president, and Carl Kirkwood ("Kirk") Andrews, vice president and general manager, were interviewed this past month by PULP & PAPER in regard to the new additions and the long evolution of the mill to higher grades.

"What has happened in our mill is typical of what has happened to most of the newsprint mills of the U. S. of 30 to 40 years ago," they said. "It has placed us in a more stable market. Our customers today are more cooperative and conscious of the fact that a sound and profitable paper industry is important for their future than were most of the press a quarter of a century ago."

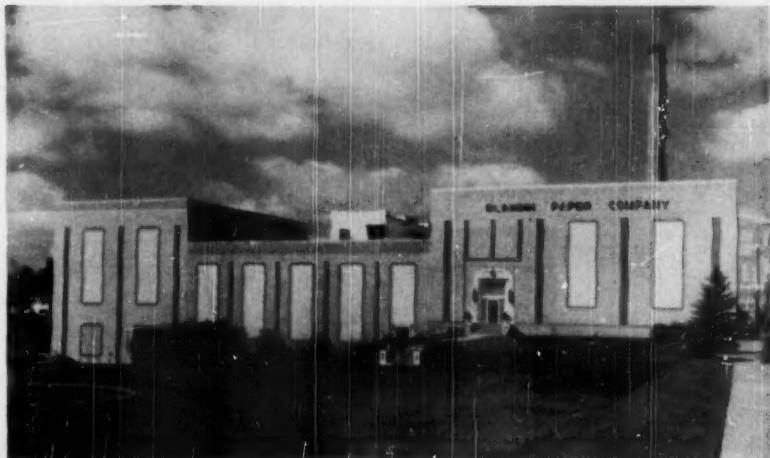
Mr. Blandin, who is now 77 years, but active in management and who maintains a home in Grand Rapids as well as in St. Paul and Florida, wrote a booklet on the newsprint industry back in 1917 in which he predicted the industry would be driven to Canada by the repeal of the tariff and the attacks publishers were making upon the mills and their pressure politics in Congress. All his predictions came true.

"I was a newspaper publisher myself but my sympathies were with the paper mills," Mr. Blandin told PULP & PAPER.

The paper mill at Grand Rapids, Minn., was a little nondescript 25-ton-a-day plant when Mr. Blandin bought it in 1916 to assure his St. Paul papers, the Dispatch and Pioneer Press, of an adequate newsprint supply. Mr. Andrews, then bookkeeper for the newspaper enterprises, moved to Grand Rapids as manager, a position he has held ever since. In 1916 there were some 65 companies making newsprint in the U. S.—now there are only ten.

### New Winders Use Reliance Drives

A new Appleton Machine Works winder also was installed recently, and like the new supercalender serves the No. 3



HERE ARE TWO PICTURES TAKEN AT BLANDIN PAPER CO.

TOP: The new supercalendering addition is the new raised wing on the left. This windowless style of architecture, introduced for cleanliness and air and drying control, made Blandin nationally famous back in 1931. It was carried out in the new addition. The light brick structures, attractively landscaped, make Blandin still one of the most handsome industrial plants anywhere.

LOWER VIEW: This shows new dam and reconstruction completed after the disastrous flood over two years ago.

156-inch Fourdrinier machine. A shaft-type winder, it is equipped with individual motor drive and electronic tension regulator developed by the Reliance Electric and Engineering Co. This permits the operator to maintain automatically either constant or tapered tension on the paper, thereby securing the hardness of roll de-

sired, regardless of the kind of paper being handled.

The supercalender itself is driven by a 300 h.p. Reliance motor which makes available speeds ranging from an operating top of 1800 feet per minute to a threading low of 40 feet per minute. The machine takes a 148-inch trimmed roll, and

# SOUNDVIEW



*High Grade*  
**BLEACHED  
SULPHITE PULP**

**SOUNDVIEW PULP COMPANY**  
**EVERETT WASHINGTON**

has anti-friction bearings, welded steel frame and all latest appliances. It will handle all the production of No. 3 machine—about 100 tons per day.

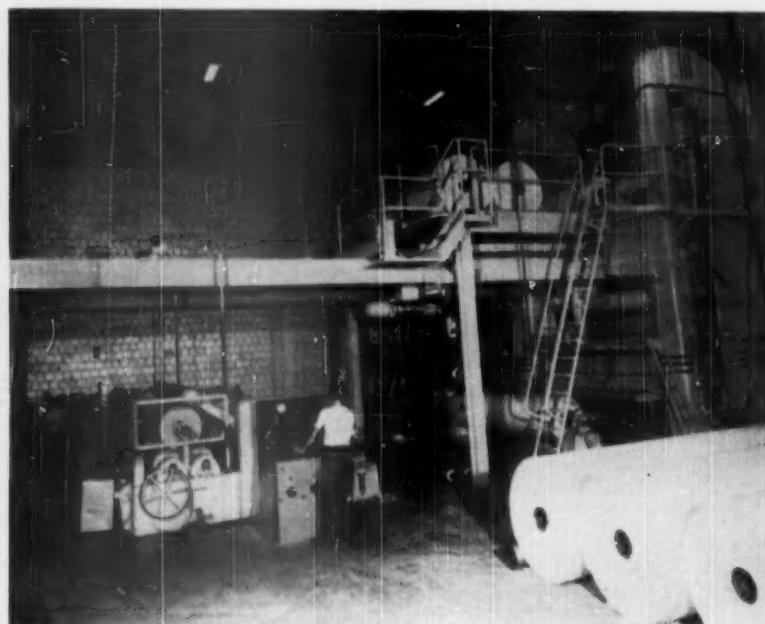
A new two-drum rewinder also is interesting for the combination of electronic tension regular and speed control, incorporated in it by Reliance engineers. Each drum of the rewinder has its own motor. These operate from the same 75 h.p. Reliance variable speed (V'S) drive to give a top speed of 3500 feet per minute. Unwinding roll on the machine is equipped with a Reliance drag generator to maintain constant tension in the sheet being fed to it.

A new 90 ft. by 45 ft. steel and brick building addition has been built for the new equipment, in keeping with the windowless style of architecture which made Blandin famous back in 1931. This is in a picture with this story. Blandin pioneered this type of architecture for better drying control and cleanliness.

Only about two years ago Blandin stalled an Appleton supercalender which handles 76-inch rolls. An older one of 60 inches capacity is being replaced by the newest one and No. 2 and No. 3 will now be able to handle all the mill production.

Two years ago a break in the mill dam and flood temporarily stalled the progress in the up-grading of products at Blandin but the damage was rapidly repaired. The year before, Blandin had completed extensive improvements which were described and illustrated in the March 1948 issue of *PULP & PAPER*.

**HERE IS NEW 148-INCH APPLETON MACHINE CO. supercalender stock and rewinder at Blandin Paper Co. All electrical equipment for these machines was furnished by Reliance Electric & Engineering Co. of Cleveland. The supercalender can handle 142-inch jumbo rolls from No. 3 machine, supering them at 1800 f.p.m. This is more efficient than cutting into smaller rolls and supering the latter separately. Also by immediate supering after machine it helps detect any defects in sheet more quickly. Extension was engineered and constructed by Paul Laurence Co. of Minneapolis.**



C. K. BLANDIN (left), Pres., and CARL K. (Kirk) ANDREWS, Vice and Gen. Mgr., Blandin Paper Co., interviewed by *PULP & PAPER* on occasion of recently completed changeover of their mill from newsprint to 100 per cent supercalendering book paper production.



Beloit Iron Works modernized the No. 3 machine with new Monel headbox, breast roll and breaker stack, and it was speeded up to 1,200 f.p.m. There were also improvements on No. 1, including two new suction presses and new G.E. turbine. This machine trims 110 inches. The old No. 2 machine was taken out and sold in 1937, when all three were on newsprint. New groundwood bleach plant, new pulp preparation equipment and other improvements were among other postwar additions at Blandin.

Myles Reif is superintendent, G. E. Meyers is production and sales manager, J. E. (Jim) Johnson is purchasing agent, George W. Goetz is plant engineer.

Blandin makes 120 tons a day of groundwood, using balsam, spruce and poplar from its own northern Minnesota timberlands or bought from others. It purchases about 50 tons a day of sulfite pulp.

### **Two Big 1951 Meetings Set by Northwest Supts.**

Mace Harris, manager of pulp manufacturing of The Northwest Paper Company, Cloquet, Minn., as chairman of the Northwestern Division of the Superintendents' Association, has announced tentative meeting dates for both the 1951 Spring meeting and the 1951 Fall meeting of the division. These dates are May 4-5 for the Spring meeting; September 14-15 for the Fall meeting.

The Spring meeting is scheduled for the Radisson Hotel, Minneapolis, Minn.; the Fall meeting for the Northern holiday resort, Marenisco, Mich.

### **Ben Cancell Takes Rhinelander Post**

On Nov. 14 Benton R. Cancell was honored with a farewell luncheon at the Union League Club, New York, by top associates in St. Regis Paper Co., from which he recently resigned to become associated as executive of the Rhinelander Paper Co., Rhinelander, Wis.

A "graduate" of the pulp and paper WPB of World War II, Mr. Cancell joined St. Regis soon after the close of his Washington activities, later went to Powell River. He rejoined St. Regis in 1948 as vice president and general manager of manufacturing in the Printing, Publication and Converting Paper Division.

### **New Press at Oregon City**

Publishers' Paper Co., Oregon City, Ore., has replaced a plain press, second press on the mill's No. 4 machine, with a Beloit suction press. This modern unit, installed in October, has reduced steam consumption at this processing point and also reduces amount of breakage by producing a dryer web ahead of the dryers. No. 4 is a newsprint machine trimming 220 inches and producing 160 tons per day.

# KRAFT PULP MEETING

## SUMMARY OF SOME TAPPI PAPERS

Causticizing and operation of the lime kiln provided a maximum interest topic in the two-day TAPPI Alkaline and Pulping Conference sessions, held in Jacksonville, Fla., Oct. 25-26, in which the program also offered well prepared papers on washing and effluent nuisance abatement.

The third day's schedule included a visit to University of Florida's engineering station, a mill visit at Hudson Pulp and Paper Co.'s Palatka mill, and dinner at Sportsmen's Lodge, Welaka, Fla., as guests of Noble & Wood Machine Co.

In the causticizing-lime kiln cycle of discussion there crept in the reference to the kiln's intrusion as something to reduce dumping into ditches now talked of in terms of operating exactitude with close instrumentation of every phase highly desirable.

In a review of literature on causticization, R. R. Fuller, of Gulf States Paper Corp., said there was a lack of discussion of the ratio of organic to inorganic matter, which is found throughout the system, and also the absence of any stress on the fact that causticizing operations affect the entire cycle of production. He found that as sulfidity is increased by introduction into green liquor, causticizing efficiency decreases; as pulp gets stronger and has better pH with sulfidity from 2.5 to 3.5, it decreases below 2.5 per gallon. He found a tendency in the literature to "draw three curves and 15 conclusions," wondering if more honesty is needed. The caustic house, he concluded, is not something "just there" but an important factor in which conflicts must be balanced for an all-over operation.

The application of hydrogen sulfide in sulfidity control was described as an economical function in the kraft process by L. B. Taylor of Pittsburgh Plate Glass Co., who gave the differences between soda ash and lime use, in this case the lime yielding a different sulfur distribution. He described the vessel used, a vertical cylinder with steam entering the bottom and gas vapor vent at top. Steel was found not badly corroded, but with stainless steel applications recommended to serve fixtures. Using 216 degrees at 200 minutes or 320 degrees (F) for 160 minutes resulted in no unreacted sulfur. Temperature should be raised to desired level as rapidly as possible. Hydrogen sulfide is easily absorbed in white liquor, but a diffuser could be utilized, he said. When soda is used, it can be added either in white or black liquor, according to views of the mill. Soda ash was said to be equal to caustic soda but reduces cooking ef-

**SOME OF PARTICIPANTS**  
in Jacksonville sessions:  
(l to r). COVER C. PORTER, Southland Mills;  
WILBUR F. GILLESPIE,  
Gaylord Container, and  
W. M. CARY, National  
Container.



ficiency. Lime use requires residue handling, he pointed out.

Results of tests on the effects of causticity on white liquor settling rates were given by Milton Roberts of Hudson Pulp & Paper, who summed them up "as expected." Desirable lime was classified as mild, highly reactive and quick settling.

### Kahn of Infilco Leads Panel

Much panel discussion was evoked by a report of J. M. Kahn of Infilco, Inc., Chicago, on use of epsom salts as a coagulant, and use of a centrifuge. The work done by Infilco was pilot plant scale. The epsom salts not only aided settlement but also reduced silicate and iron content. The settlement was rated as 12% faster. Use of a centrifuge to separate white liquor mud and caustic liquor mud brought excellent results. Moisture in the cake was 35%. Where it was needed to clarify cooking liquor too high to filter the magnesium salts were used for coagulation. The centrifuge use might obviate large settling tank installation, it was said.

In launching the panel discussion, William B. Gery, of The Dorr Co., said the economic approach is always a factor; that 84% conversion is rated top but 82% rarely passed; that this gap could be closed (a practice in Sweden, some few places North America). The installation is a compromise and the gap could be closed with a secondary system. Corrosion he found variable among mills with apparent similar conditions and wondered if polysulfide could be a factor. The problem has been met at critical points with stainless steel. The two stage slaking, he was sold on, since it minimized hot lime storage. In this a primary slaker behind the kiln (or long slaking tank) followed with a secondary milk of lime to serve as No. 1 slaker. From this the flow would be by gravity to conventional Dorr equipment where makeup would be added. The two-hour detention in the first stage would give more complete slaking than 15 to 20 minutes and even out-flow. Grit raking would be at the secondary stage after makeup.

Applications of various types of steel, from cast iron to the highest corrosion alloys, were discussed.

### Practice at Macon Mill

W. M. Ebersole of Macon Kraft Corp., Macon, Ga., said since the lime kiln and caustic house operations affected one another they put one man (caustic house operator) in charge of both, advantageously. He had heard of long vat detention at the old Braithwaite mill (originally bagasse; then E-Z Opener kraft) and tried it; found 2-hour detention gives better mud and results. They keep a daily chart of white vs. green liquor and salt cake saving; explain this chart to the operator; are strong for instrument use as they show changes before too far out of line; use recording thermometer on milk of lime and wonder if could hook it with automatic control on milk of lime feeder. They give the operator a green liquor chart related to the paper machine and phone from machine room when significant changes are being made there.

Franklin Jones, of St. Joe Paper Co., Port St. Joe, Fla., provided an interesting, positive talk on analytical control of causticizing, citing three steps as (1) check for total alkali, (2) precipitable calcium, and (3) titration. He strongly urged the fostering of uniform methods and manner of making reports to stop confusion in top management.

Corrosion from chloride brought a flurry about experience of a West Coast mill with this problem (from seawater) and that at an Alabama mill, where a carload of table salt was picked up in error. In the latter case it required two weeks to clear the system, since it even showed up in Cottrell unit corrosion. Dubbed an item to watch at tidewater mills it was said non-meetable with metals economically.

Discussion where to add sulfur was inconclusive. Some said that only half was needed if at the furnace. A Crossett Paper Mills man reported switching back to the green liquor with no economic record.

but thought a cut in digester corrosion. This ran into silicate vs. corrosion, which dipped into the engineering meeting discussions at Cincinnati, reported in PULP & PAPER last month (this referred to discussion that in recovery boilers where silicate linings were used or where they were used but now displaced or reduced by water-cooled walls, some silica was displaced into the smelt and being carried over served to prevent digester corrosion).

#### Lime Kiln Discussion

Normal lime kiln speed has been considered as 1-RPM but the current trend is for higher speeds, according to S. A. Kiedl, of Allis-Chalmers, who opened the afternoon program. Critical speed of operation is lower on long, narrow kilns than in short units of high diameter. Mr. Kiedl said that generally storage for slush is inadequate and the lime kiln is tied too closely to causticizing. Care in operating crew selection was urged.

A technical paper on lime kiln design and function, prepared by the late Ralph E. Gibbs, was read for him by B. Magee of Traylor Engineering. Devoted to fundamentals of lime kiln thermodynamics, the paper pointed up the economics by saying that if the cost of heat transferred to the interior surface of the kiln is greater than the cost of providing and maintaining the kiln surface (per square foot) then the kiln is justified. If kiln cost per square foot is higher than heat application, then it is uneconomic. Mr. Gibbs seemed to think an 8x125-foot kiln a basic standard with variations depending upon contingent factors.

#### A Bird Centrifuge for Sludge

A paper prepared by Robert Bowen of North Carolina Pulp Co., was read for him by Frank L. Brinkley of the same company. It presented experiences in operation from use of the Bird centrifuge for sludge washing and thickening. The operation of this installation suffered initially because of inadequacy of water supply, since remedied.

Kiln operation discussion in the panel following was quite frank, covering the irregularity of operation depending upon the operator's attempt to cope with irregular feeding, the formation and dissipation of rings (in main due to the poor start the kiln got in the industry), and need for exactitude. These included the point that irregular feed plus constant forced draft for the kiln magnified the difficulties since the amount of moisture (related to heat used) fluctuated so the volume of air to be moved or rate of fan induction should be variable. This discussion was enlivened by an exchange between "Judge" W. M. Cary, of National Container Corp., Jacksonville, and Robert S. Walker, of Traylor. The use of the "ferris wheel" for feeding a long kiln, a practice followed in the cement industry, was brought out. The point developed was that the long kiln particularly must be operated with great exactitude.

The Wednesday sessions were presided over by Henry Vranian, Chesapeake

Corp., West Point, Va., alkaline committee chairman. Thursday morning's session had R. R. Fuller, Gulf States Paper Corp., as presiding officer. The Thursday afternoon session, devoted to the subcommittee on white water and waste disposition, had Cover C. Porter, Southland Paper Co., as presiding officer.

#### Brown Stock Washing at Chesapeake Mill

Experience with the brown stock pressure washer system (Valley Iron Works) was given the Thursday morning session by Mr. Vranian, of The Chesapeake Corp., West Point, Va. Here there are two lines of three stage each washers for kraft brown stock, entirely closed, taking kraft brown stock from blow tank (5% consistency) through a control valve to a thickener at 11% and through the three successive "presses" instead of "washers" at 37% to 40% consistency. The presses are connected with nickel-plated screw conveyors that are keyed to prevent pulp from revolving. These perform a repulping operation.

A level control prevents the liquor from falling back to blow tank level. Since the process is hot, there is no incentive for introduction of air. The second and third presses take 180 GPM, which would be low except for high stock consistency. Foam is eliminated and blow tank can be one-half to two-thirds full. The press cylinders are fitted with close clearances, and are wiped clean of stock. The installation started operation Nov., 1949. A fourth press is being added to one line to relieve pressure on the evaporators, which are operating at capacity.

Tonnage life of worms is thought 100,000 tons. Tonnage is controlled by R.P.M. and excess of needed stock is built up in a 200-ton capacity chest. The practice is for high washing capacity operation. Each of the lines has 300-ton capacity. The installation is susceptible of various physical arrangement. If power stoppage occurs, the conveyor is backed up, the pulp slushed, and normal operations started.

THIS PICTURE OF A FOURSOME of Union Bag and Paper Corp. officials was taken at company's annual golf outing recently at Westchester Country Club, Rye, New York. Left to right: LEONARD J. DOYLE, Vice President in charge of Sales; ALEXANDER CALDER, JR., Vice President and Assistant to the President; H. STUART DANIELS, Executive Vice President; and DONALD J. HARDENBROOK, Vice President in charge of Public and Industrial Relations.



The installation from blow tank agitation to storage tank has 1.79 h.p. installation (power) per air dry ton, with actual use 1.36 h.p./ton. Total h.p. installation 552½ and actual utilization 421 h.p. Low pump use because of high consistency low volume stock provides the major power savings. Temperatures can be high, 160 to 200 degrees F.

Mr. Vranian said salt cake purchases run 115 lbs. per air dry ton.

#### On Storage of Pulpwood

Long stored pulpwood will not give the equivalent yield as green or fresh cut stock, according to a report made by W. F. Gillespie, technical director of Gaylord Container Corp. First, there's more ¼-inch screenings. Then, using density as the basis of tests instead of freeness, strength is high but other Mullen tests are down on dry vs. green wood. Results reported included several days' run on dry wood compared with six months' records on the mill's cylinder machine.

Gaylord's experiences were bulwarked with a report from Southland, which handled storm-down wood running to a year old. The dry wood did not jordan in the same manner, indicating some varying effect on the lignin. The dry wood had a lower viscosity.

Results of an extended study of effects of cooking under constant pressure and constant temperature were given by Dr. W. J. Nolan of the University of Florida's engineering station. The station is well equipped and is seeking more projects to raise its operations above the current 25% capacity.

Dr. K. W. Coons, University of Alabama chemical engineer head, discussed design of two types of condensers used on digesters for the condensation and recovery of turpentine vapors. Dr. Coons has served as consultant of National Southern Products Co. and of Gulf States Paper Corp., both of Tuscaloosa and both early in the field of tall oil recovery in the Southern pulp and paper mill field.

Murray L. Oliver, Continental Can Co., of Hopewell, Va., talked about methods

used for checking moisture content of chips going to the digester and compensation to attain uniform liquid valuations. A Weight-o-meter provides the basic factor in this.

Thrifty re-use of water was developed in a paper prepared by A. E. Drew and read by R. O. Gribble, both of Southland Paper Mills, Lufkin, Tex. Summed up, the mill reclaims for re-use 7000 g.p.m. with an installation that cost less than \$2,000.

W. O. Hisey South African Pulp & Paper Industries, of Johannesburg, South Africa, presented an interesting paper on oxidation of digester and evaporator gases and vapors for control of nuisance fumes. The digester, using hardwoods, eucalyptus and wattle, was the worst offender. The mill, located at 5700-foot altitude, draws its water supply from deep-down gold mines and uses a stream that's dry when it doesn't rain. The mill shifted from a soda to kraft process.

The arrangement is from digester relief to blow tank then to surface condenser, based on continuous blow to tank with steam purge to condenser with constant slide back pressure, no air being admitted as that would make an explosive mixture. The condenser has a duct to black liquor oxidizer and here air is introduced from the vacuum pump's discharge, bringing the gas concentration to a low level. Efficiencies have checked 83%, 92%, 84% with normal about 85%. The Na<sub>2</sub>SO<sub>4</sub> lost per ton of pulp is rated at 4.6 lbs. in the condensate effluent, BOD 30 hours 930 PPM, rate of flow 1800 GPM. Treatment is effected with a small amount of chlorine and then the flow sent to the spray pond. No local complaints in six months.

The mill capacity is 260 to 270 tons per day, which now is being doubled. The recovery unit is a Babcock & Wilcox 75-ton unit. Behind the furnace is a cyclone evaporator; rate to evaporator 53%, to furnace 63%. Salt cake recovery (Na<sub>2</sub>SO<sub>4</sub>) per ton of pulp, 109.3 lbs., 48.0 lbs., 126.6 lbs. After the cyclones there are three fume tower recovery stacks. The amount of fumes that finally escape from the stack is small, and comparable to sulfur in coal smoke. Pine used is comparable to Caribbean and Mexican.

The program was concluded with a paper presented by Allyn R. ("Red") Skelton of American Cyanamid, on white water re-use from standpoint of size, alum and wax utilization, a well prepared document.

### "Uncertain Packaging"

Packaging under today's uncertain conditions was the theme of the 12th annual forum of the Packaging Institute, Oct. 23-25, at Hotel Commodore, New York. Among industry men and affiliate executives taking part were Walter Sooy, vice-president of Gardner Board and Carton; Kenneth Marvin, Eastman Kodak; Dr. L. E. Simerl, Marathon Corp.; H. E. Brockett, Continental Can; and F. S. Leinbach, Riegel Paper Corp., was chairman of the materials division, which includes paper, films and foils, shipping containers, as well as rigid plastics, glass, and printing subjects. With J. D. Macmillan, Robert Gair Co., Inc., Mr. Leinbach is a board member of the Packaging Institute.



STAFF MEMBERS of The Champion Paper and Fibre Co., Hamilton, O., who prepared the 1950 annual report of company which was top prize winner in a nationwide contest. Standing: R. C. SKILLMAN, Assistant Director of Public Relations; ROBERT C. HAYNIE, Director of Management Planning; HENRY RIGBY, Assistant to the President. Seated: HOMER L. DILLARD, Controller; DWIGHT J. THOMSON, Vice President and Director of Industrial and Public Relations; and CARROLL L. WILSON, Director of Finance.

### "Oscar of Industry" Award

The Financial World Survey of Annual Reports has judged Champion Paper and Fiber Co. as having the best annual report of the pulp and paper industry in 1950. This marks the third year that Champion's report has been selected as the best in the industry. The bronze "Oscar of Industry" trophy was presented to Dwight J. Thomson, vice-president of the company, at a banquet in the Hotel Statler, New York, Oct. 30.

In pulp and paper, Crown Zellerbach Corp. was runner-up for top honors, while Abitibi Power & Paper Co., Ltd., placed third.

### Stone & Webster Manager

Stone & Webster Engineering Corp. has announced the appointment of Robert Jefferson Carter as Southwestern district manager with offices in Esperson Building, Houston, Tex. Mr. Carter, who succeeds A. T. Krook, recently elected president of Stone & Webster Canada Ltd., after nine years as manager at Houston, is a graduate of Washington University of St. Louis in engineering in 1924.

### Union Bag Is Tops In Products Division

Union Bag & Paper Corp.'s 1949 Annual Report was judged best in the paper products industry in the annual survey conducted by "Financial World" magazine. This is the third "Oscar of Industry" awarded to Union, having previously earned it for the 1946 and for the 1948 reports.

### Paper School Begins 18th Year at Camas, Wash.

Crown Willamette Paper School, a Crown Zellerbach Corp. institution at Camas, Wash., which has to date presented 2,386 diplomas to employe students, began its 18th year Oct. 17 with a 17-member staff and an enrollment of 262 students. The students are attending from C-Z Camas and West Linn plants, Portland offices, and Western Waxed Paper Co. plant in Portland.

Three of the staff members are West Linn plant personnel; others, Camas. A. G. Nalwick, resident manager at Camas, is dean.

CHAMPION PAPER & FIBRE CO., Hamilton, O., provided two speakers for the Cracker Barrel Caravan—a touring trailer show supporting the bipartisan Hoover Commission proposals for better efficiency in government. At the microphone is LEWIS CLARK THOMSON, Director of Champion's Legal Department. Second from right is DWIGHT J. THOMSON, Vice President and Director of Industrial and Public Relations for Champion, who was also a speaker.



# Personals

## News About Industry People From Coast to Coast

**ROY K. FERGUSON**, president of St. Regis Paper Co., is chairman of the Paper Manufacturers' Division of the 1950 fund appeal of the Travelers Aid Society of New York to raise \$309,000, for non-sectarian aid to persons in difficulty away from home. **JAMES F. LEVENS**, president of George W. Miller & Co., heads the Wrapping Paper Division; and **THOMAS**

**A. MAGEE**, president of Gray Envelope Manufacturing Co., Inc., will run the Envelope Manufacturers' Division. Last year the efforts of paper men assisted 108,633 men, women and children at New York docks, railroad stations and bus terminals.

**A. J. HAYES** has joined Crown Zellerbach Corp., Camas, Wash., as day supervisor in the paper mill. Until recently he was paper mill superintendent at Kalamazoo Vegetable Parchment Co., Espanola, Ont., and prior to that was with Nekoosa-Edwards Co., Inc., Nekoosa, Wis.

**CLARENCE BRUNER**, resident manager of Crown Zellerbach Corp., West Linn, Ore., until a couple of years ago, when

he became C-Z management consultant, has retired after 52 years' service with this and predecessor organizations. His retirement was recognized with a banquet attended by company officials of the Pacific Coast states.

**RALPH B. CASE** has been appointed assistant general sales manager of Hollingsworth & Whitney Co. He joined H. & W. in 1909, and his entire career has been with that company. Prior to this appointment he was eastern sales manager. He continues to make headquarters at 230 Park Ave., New York. **CLARK H. MORIAN, JR.**, succeeds him as eastern sales manager. Morian spent a number of years in industry sales before joining H. & W. in 1946.

## Grant Geisinger Dies

Grant Louis Geisinger, vice president of Northwest Filter Co., Seattle, died Oct. 28, at his home in Seattle. Mr. Geisinger was associated with Wm. Gibson with Northwest Filters since March, 1944, going there from the Carthage, N. Y., mill of Crown Zellerbach Corp. He had previously been in technical work at Crown Z mills in Port Townsend and Port Angeles, Wash. He was born in Milwaukee, Wis.

Survivors include his widow, Doris, a son and daughter, his mother, and a brother, all of Seattle.

**VERNON E. JOHNSON**, general manager, Canadian International Paper Co., Montreal, addressed the International Circulation Managers Association at Murray Bay, Que., and told them that with effective forest management Canada's timber acreage might be increased threefold.

**GORDON CAMPBELL**, new technical service engineer with the E. B. Eddy Co., at Hull and Ottawa, previously served Consolidated Paper Corp., Canada Paper Co. and J. R. Booth Co.

**JAMES A. CRESWELL**, formerly service operations superintendent for Spruce Falls Power & Paper Co., at Kapuskasing, Ont., is the new purchasing agent for that company, with office in Toronto. **J. D. HOFMAN**, who has been acting purchasing agent, has returned to his former post with Kimberly-Clark Corp. at Neenah, Wis.

## Randall in Scandinavia

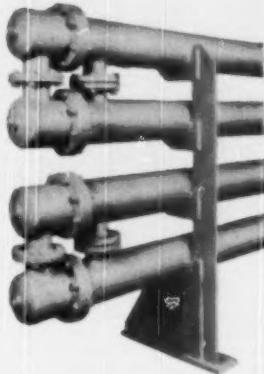
Herbert T. Randall, vice president and director of research and engineering for the Champion Paper & Fibre mills of Ohio and the South, recently toured Scandinavian countries and Europe, looking into new developments across the water.

**R. J. McDONALD, SR.**, for many years with Donnacona Paper Co., latterly as general superintendent, died recently, aged 57. Before joining Donnacona he was with Gould Paper Co. at Lyons Falls, N. Y.

**ROY H. LYONS**, mechanical superintendent of Provincial Paper, Ltd., mill at Port Arthur, Ont., and an employ of that company for the past 32 years, died recently.

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*Personals*

**News About Industry "Affiliates"**  
**The Equipment and Supply Men**

**EDWARD F. DOTY**, designer of screw and rotary pumps, has become associated with Warren Steam Pump Co., Inc., Warren, Mass. Mr. Doty was formerly for many years with Quimby Pump Co., of Newark and New Brunswick, N. J., specializing in design and application engineering.

**ARTHUR H. SAMPSON**, New England manager, dyestuff department, American Cyanamid Company's Calco Chemical Division, has retired, after being closely associated with New England's manufacturing circles for forty years.

**Theurer Daughter Wed**

Allen H. Theurer, secretary and superintendent of Appleton Woolen Mills, Appleton, Wis., gave his daughter, Miss Elizabeth Ann, in marriage to Lt. John Frederic Seering, Jr., of New London, Wis., Sept. 16, in the home of her parents, Mr. and Mrs. Theurer. Lt. Seering served in the Pacific in World War II and was home on leave from a bomber command training in England. The couple flew to California and motored back to Wisconsin.

**LEROY SHANAMAN**, Pennsalt manager in Portland, Ore., has fully recovered from a recent operation and was in Philadelphia with his wife, Maty Grace, for the 100 anniversary celebration of the Pennsalt Mfg. Co.

**RAYMOND T. PORTER** has been appointed eastern sales manager of Heppenstall Co., Pittsburgh. John P. Roche, vice president, said Mr. Porter, now in general supervision of die block, shear knife, tongs, rings and other forging sales throughout the company's Boston, Bridgeport, New York and Philadelphia sales districts, will make his headquarters at the offices of Heppenstall Co., Bridgeport, Conn.

**THOMAS J. BANNAN**, president of Western Gear Works and of Hallidie Machinery Co., Seattle, was 1950 president of the Community Chest and Council for Seattle and King County, heading a \$1,800,000 charity drive.

**ALBERT H. CLEM** has been appointed to the newly created position of assistant to the vice president in charge of sales of the Pennsylvania Salt Manufacturing Co., it is announced by William P. Drake, vice president. Mr. Clem was formerly assistant manager of sales in Pennsalt's special chemicals department. In his new position he will handle special assignments for the vice president. A graduate of Penn State, he joined Pennsalt in 1938.

**Doan Succeeds Dow's  
Jeff Smith on Coast**

The Dow Chemical Company announces the appointment of Leland A. Doan as western sales manager of The Dow Chemical Company.

Mr. Doan succeeds J. F. (Jeff) Smith, who has asked to be relieved of his responsibilities after 22 years' service as sales manager and has now been assigned other administrative duties by the general manager.

**Eastwood-Nealley Exec.  
On Trip to Far West**

Nelson Webb, vice-president and works manager of Eastwood-Nealley Corp., Belleville, N. J., manufacturers of paper machine wires, was touring Pacific Northwest paper mills in early November. He was met at Portland, Ore., by John M. Fulton, manager of Pacific Coast Supply Co., agents for E-N, who accompanied him.

**PETER J. KERN**, Ch. E., has joined the technical and research departments of Kinsley Chemical Co., Cleveland, O. He will assist E. R. TIMLOWSKI, technical director, in the operation of the firm's new pilot plant for fiber research. Mr. Kern is from Case Institute of Technology.

**HANS SVANOE**, Norwegian engineer prominent in eastern U. S. industry for many years, was planning a trip in November to the Midwest and the Pacific Northwest. In the latter area he would visit COL. AL HOOKER, of the Hooker Chemical Co. at Tacoma, Wash. Col Hooker and Mrs. Svanoe are cousins. Mr. Svanoe's home town is now Warren, Pa., where he is with the Struthers Wells organization, announced as interested in stream pollution problems through a pilot plant there.

**LARGE PAPER MACHINERY MANUFACTURER** interested in securing services of an assistant superintendent of machine shop, also erecting men for shop and field work. In reply, please state age and experience. Reply to P&P Box No. 84, c/o PULP & PAPER, 71 Columbia Street, Seattle 4, Wash.

**WANTED**  
**MECHANICAL AND/OR CHEMICAL ENGINEER**, not over 35 years old, with some pulp and paper mill experience for permanent employment as draftsman and engineer in engineering department of mid-Willamette Valley containerboard plant. Please reply giving all particulars, salary required, and include a recent small photograph. Please reply to P&P Box 87, c/o PULP & PAPER, 71 Columbia St., Seattle 4, Wash.

### Brown Moisture Recorder

A new Brown electronic Moist-o-Graph incorporates a multirange switch for continuous measurement of paper moisture in multiple ranges. The system consists of detector roll (sensing element) measuring circuit and recording instrument. By means of a switch adjustment, moisture in various types of paper is measured. Operating principles, applications, and installation photographs are included. Write E. B. Sheker, Market Extension, Minneapolis-Honeywell Regulator Co., Brown Instruments Div., Wayne and Roberts Ave., Philadelphia 44, Pa., for information and bulletin: Data Sheet 2-9-5A.

### Bethlehem Supplies Steel

Bethlehem Pacific Coast Steel Corp., a supplier of many pulp and paper mills in the west, supplied 16,000 tons of structural steel and 1,000 tons of reinforcing steel for the new Tacoma Narrows bridge, third largest suspension bridge in the world, opened Oct. 14 and linking the Seattle-Tacoma area with the Olympic Peninsula. On the peninsula, incidentally, are six pulp and paper mills.

### Swedish Cellulose Profits

Swedish Cellulose Co. reports a net profit of 7.69 million kronor for 1949 (\$41 millions for 1948). The dividend is 7%. Total shipments decreased in value from 305 to 288 million kronor. The aggregate production capacity of the mills belonging to the Swedish Cellulose Co. group is: sulfite paper pulp, 240,000 tons; sulfate pulp, 210,000 tons; mechanical pulp, 90,000 tons; newsprint, 40,000 tons, and lumber, 85,000 standards.

### New Cochrane Publications



Cochrane Corp., 17th St. and Allegheny, Philadelphia 32, Pa., has published a new bulletin describing the Cochrane Liquid Sludge Contact Reactor, (Publication No. 5001), a water conditioning apparatus that takes advantage of the well-known chemical principle that previously formed precipitates added in the form of sludge or slurry will accelerate reactions.

### Forest Licenses in British Columbia

While criticism of British Columbia's forest management program for sustained yield operation has not been entirely dispelled, more than a million acres of timber with an estimated allowable cut of about 33 million cubic feet (169 million board feet) have so far been placed in reserve for this purpose by licensed companies.

Some of the province's largest operators are included among those which have applied for forest management licenses. Most of the companies which are holding out against the plan are critical of the present form of land tenure in British Columbia and the prospect of timberlands reverting to the government at the conclusion of the management cycle.

Some amendments to the present forest management legislation may be dealt with at the next session of the British Columbia legislature, but they are not expected to be of a drastic nature.

In addition to the five licenses so far granted by the government, eight applications have been approved.

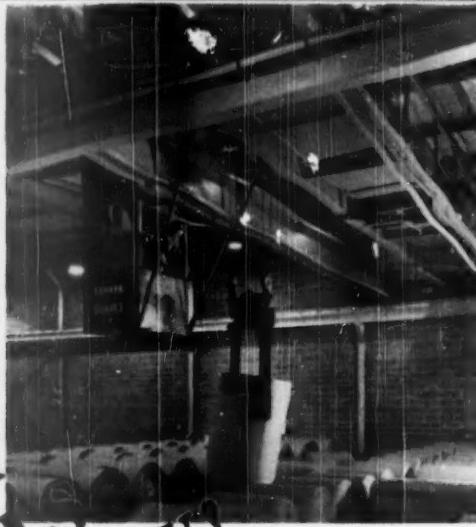
Four applications currently being advertised, which include the H. R. MacMillan Export Co., Alaska Pine Co., Clearwater Timber Products (for an area on the North Thompson River) and the Nootka Timber Co. embrace a productive area of approximately 578,000 acres.

Companies whose licenses have been granted and which are operating are: Columbia Cellulose Co., 660,000 acres, annual yield, 75 million board feet; Canadian Western Timber Co. (for Elk Falls Co.), 215,000 acres, annual yield 75 million board feet; Passmore Lumber Co., 93,000 acres, annual yield 10 million board feet; M. C. Carroll, 4000 acres, annual yield 1½ million board feet; Western Plywood Co., 80,000 acres, annual yield 8 million board feet.

### Becco Bleaching Process

Cold steep bleaching of wood pulp is described in a new bulletin of the Buffalo Electro-Chemical Co., Inc. The Cold Steep Bleaching Process, carried out at high densities, makes for remarkable bleaching efficiency on Kamyr, Rogers and similar machines, it states. Separate mixing, retention and neutralization facilities are not needed.

Copies of this bulletin may be obtained from Buffalo Electro-Chemical Co., Inc., Buffalo 7, N. Y.



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G. D. GREENSWARD, who welcomed delegates to the Engineering Conference in Cincinnati, O., this fall when they visited the Allis-Chalmers Mfg. Co. plant at Norwood, in Cincinnati, where he is the General Manager.

### Western Gear Works Handles Fuller Line

Appointment of Western Gear Works, Seattle, as exclusive sales and service representatives for the Fuller line of high efficiency rotary compressors and vacuum pumps is announced by Paul Forsythe, Western Gear's area sales manager. Territory in which Western Gear Works will represent the Fuller Co., of Castusaqua, Pa., includes Washington, Oregon, Idaho, Montana and Alaska. In Southwest Washington and Oregon, Pacific Coast Geared Products, Portland representative of the Seattle company, will handle sales and service.

Pacific-Western sales engineers will, according to Forsythe, be assisted in Fuller compressor and pump contacts by J. O. Borst, a recently appointed special member of the Pacific-Western engineering staff. Mr. Borst, a graduate engineer of the University of Washington, has been in compressor sales and service in the Pacific Northwest for 15 years.

### Minneapolis-Honeywell Controls in B. C. Mills

Westminster Paper Co. at New Westminster, B. C., manufacturers of tissue and specialty papers, has recently carried out a project to provide air conditioning in the pulp room, with temperature controls and other instrumentation provided by Minneapolis-Honeywell Regulator Co. The overall job was designed by Sandwell & Co., consulting engineers.

Minneapolis-Honeywell controllers and circulating pumps are being supplied to the H. R. MacMillan Pulp Division's new pulp bleaching plant on Vancouver Island, and the same company is installing temperature controllers, circulating pumps and pyrometers at the new Columbia Cellulose Co.'s dissolving pulp mill at Watson Island, near Prince Rupert, where most of the instrumentation is by Foxboro.

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(Left and Right) Two examples of standard butt-welded fittings furnished in flanged assemblies. By using standard Tri-Clover fittings, we can often solve many "special" problems with a minimum of extra fabrication. Send for Catalog 740 covering the standard "Zephyr-weld" Rating line.



(Right) Special 14" Inlet Header for paper mill job fabricated of type 304 Stainless Steel, with 36 3" IPS connections, using Van Stone Flanges.



(Left and Right) 36 inch O.D. Tri-Clover welding fittings of mitre-joint construction—further examples of the special fabrications available to meet individual requirements. While standard Tri-Clover fittings incorporate streamlined "sweep" construction, we are equipped to fabricate practically any other type, in class through 36" O.D.

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TRI-CLOVER fittings are now being used in mills operated by West Virginia Pulp & Paper, Champion, Marathon, Dexter, International, Southland, and others. Let our corrosion specialists furnish detailed recommendations covering fittings and special prefabricated assemblies to meet your specific requirements. Send us your layout sketches.

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INDUSTRIAL PUMPS

THE Complete LINE

# POWELL RIVER'S EXPANSION

Here are details of plans of Powell River Co., British Columbia newsprint and sulfite pulp producer, to effect improvements throughout the mill and push newsprint production up 40,000 tons a year to a total of approximately 340,000 tons, as we announced last month.

This production will compare with 247,235 tons in 1948. It is hoped to attain the new objective in 1952. Over the four-year period 1948-52, inclusive, the company plans to increase its newsprint output by nearly 100,000 tons.

Completion of the work under way will round out investment since 1945 of \$25,000,000, the present program accounting for about \$12,000,000.

A substantial part of the tonnage increase has been brought about by No. 8 machine, which went into production in 1948, but considerable additional increase will be effected by plans for speed-up of five of the eight paper machines, at a cost of \$2,600,000.

Nos. 3 and 4 machines, installed in 1913, were recently speeded up from 660 f.p.m. to 740 f.p.m. It is planned to increase this still further to 1100 f.p.m. by installation of electric drives, new head boxes and slices and new Fourdriniers. The existing plain couches and presses will be replaced with suction equipment. One Fourdrinier will be equipped with a shake for producing papers of higher quality. A central lubricating system and improvements to ventilation are to be included. Nos. 3 and 4 as well as 1 and 2 are Pusey & Jones machines. Machines Nos. 5 and 6 are 234-in. Walmsley, installed in 1926. These are to be speeded up to a maximum of 1500 f.p.m. from the present 1290 f.p.m. Changes will include new head boxes and slices, removable Fourdriniers, 44-in. diameter couches with larger vacuum pumps, and new General Electric sectional electrical drives replacing the original drives, which will be re-used on Nos. 3 and 4 machines. Bottom dryers are to be fitted with composition gears to insure quiet operation. A triple-flow continuous broke beater will replace the older beaters, which will be used on Nos. 3 and 4 machines.

Improvements are planned for No. 7 machine, a Dominion Engineering Co. unit, to permit operation at 1700 f.p.m. An additional Bird screen, a larger couch motor, booster generator, a new couch generator and some modifications of the winder are included. No. 8 machine, also made by Dominion Engineering Co., is now doing about 1650 f.p.m.

Such a program naturally calls for the development of greater production of pulp and to that end the company proposes to increase the capacity of its groundwood mill through installation of new grinders, screens and washers. Choice of this equipment has not yet been made, but the total cost of building and equipment is estimated at \$865,000.

Powell River Co.'s plans for its new \$550,000 sawmill were announced several months ago. Sawmill improvements include rebuilding of conveyors, installation of new hogs, replacement of the west side log deck, bandmill, carriage and other equipment, new circular edger, new steel log haul and facilities for handling and salvaging reject blocks.

In addition to the sawmill program described it has been decided to augment the barker mill with an intermediate size hydraulic barker of a make not yet determined, to handle small logs primarily and complement the Weyerhaeuser type large log barker and the Allis-Chalmers small-log barker. It is estimated that the barker mill capacity will be increased from 25,000 ft. per hour to about 45,000 ft. per hour, and the cost of this project is estimated at \$525,000.

To modernize the steam plant and make provision for sufficient steam to meet demands of increased production, a new Babcock & Wilcox boiler installation is planned, involving the expenditure of about \$1,000,000. It will be a universal type boiler, with steam at 600 lbs. pressure for power purposes, and will be equipped to burn fuel oil and hog fuel, with provision made for coal consumption.

In order to supply sufficient electric power to take care of ultimate production of 340,000 tons of newsprint annually and 40,000 tons of pulp, a turbo-generator of

10,000 KW capacity is proposed. The total cost is estimated at \$1,000,000. Two million dollars are being spent on construction of a new wharf.

Engineering is now being completed for a concrete silo type chip storage, to be built during the coming months.

A new transmission line is to be built between the power plant at Stillwater to Powell River, a distance of about 13 miles, to cost about \$450,000.

The firm of Sandwell & Co., Vancouver, has been engaged by Powell River Co. to act as consulting engineers on the installation of the new Babcock & Wilcox boiler, turbo-generator and boiler house extension.

H. W. Beecher is acting in an advisory capacity to Sandwell & Co. on this work. The Sandwell firm is also responsible for all mechanical, structural design and detailing on the intermediate barker installation.

## Volume on Pulp Manufacturing Available

The first of a new series of four books, "PULP & PAPER MANUFACTURE, Vol. 1, Preparation and Treatment of Wood Pulp," has been published by McGraw-Hill Book Co., 330 West 42nd St., New York 18, N. Y.

It is a most comprehensive, well illustrated work, probably certainly as complete and up-to-date as any on the subject.

The volume sells for \$10.00, postage prepaid, and orders may be placed by writing PULP & PAPER, 71 Columbia St., Seattle 4, Wash.

## DeLuca Joins Jenssen

Eugene DeLuca is now associated with G. D. Jenssen Co., Inc., Electric Bldg., Watertown, N. Y., and is in charge of technical service and process development.

Mr. DeLuca was graduated from the University of Toronto in 1937 in chemical engineering. From 1937 to 1945 he was with Canadian International at Temiskaming, Que. From 1946-1948 he was division chemist with Fraser Companies' Restigouche plant, and from 1948 to 1950 was in kraft development for Fraser Companies, becoming assistant general superintendent at the Newcastle, N. B., kraft mill, which went into production in 1949.

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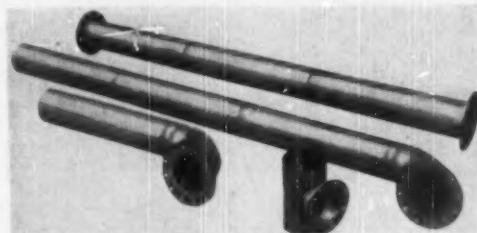
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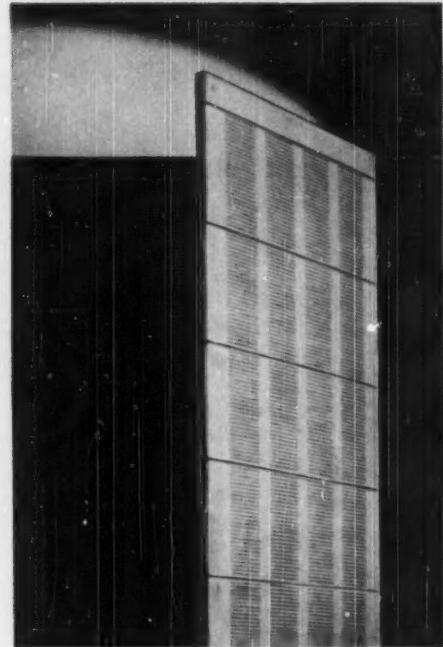
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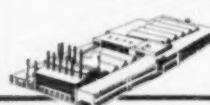
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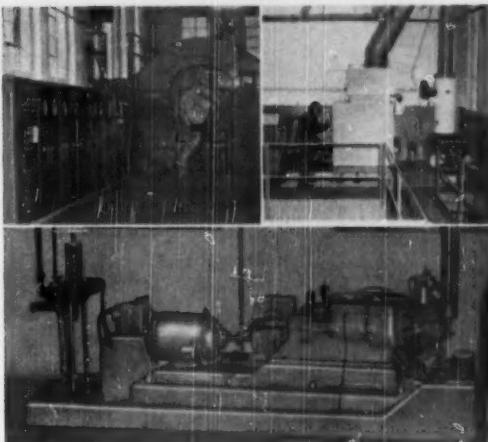


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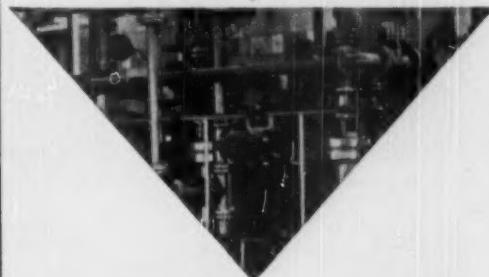
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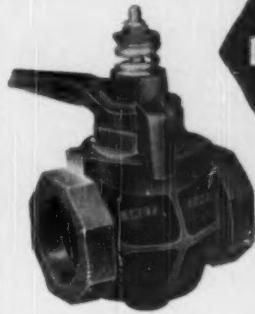
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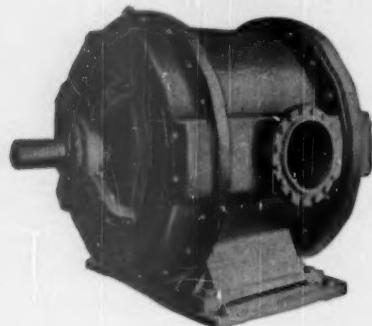
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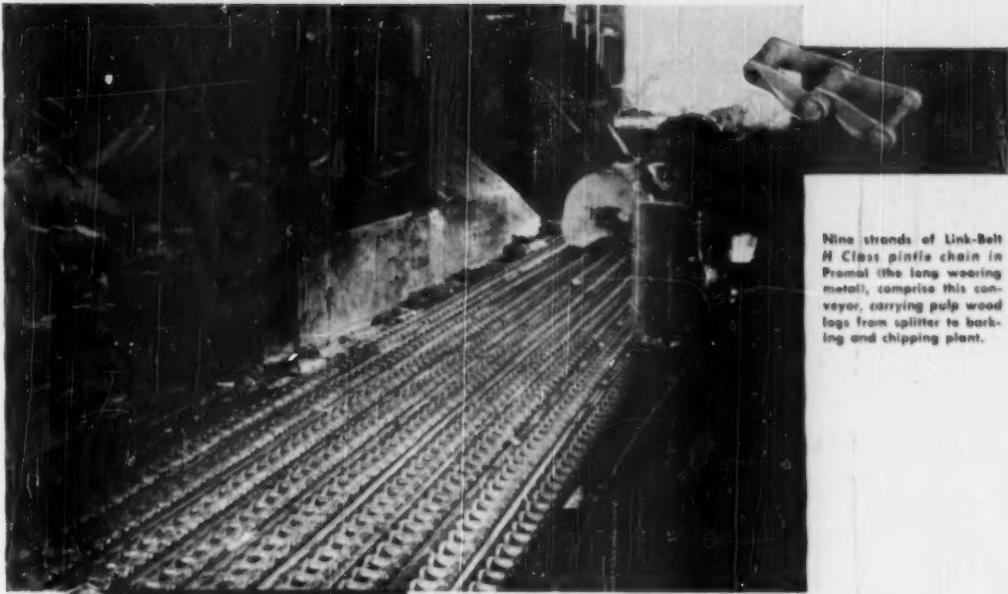
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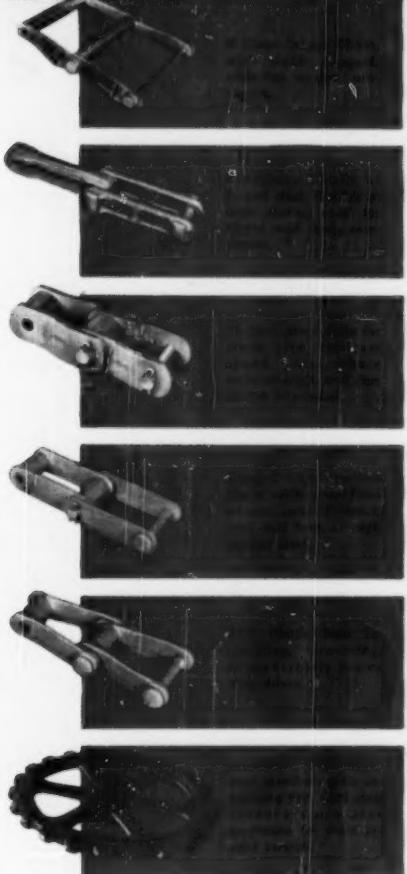
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